



Falkland Islands 1958 and 1959

LONDON
HER MAJESTY'S STATIONERY OFFICE

PRICE 6s. 6d. NET



COLONIAL OFFICE

FALKLAND ISLANDS

AND DEPENDENCIES

Report for the years 1958 and 1959

LONDON
HER MAJESTY'S STATIONERY OFFICE
1960

CONTENTS

The Colony

PART I

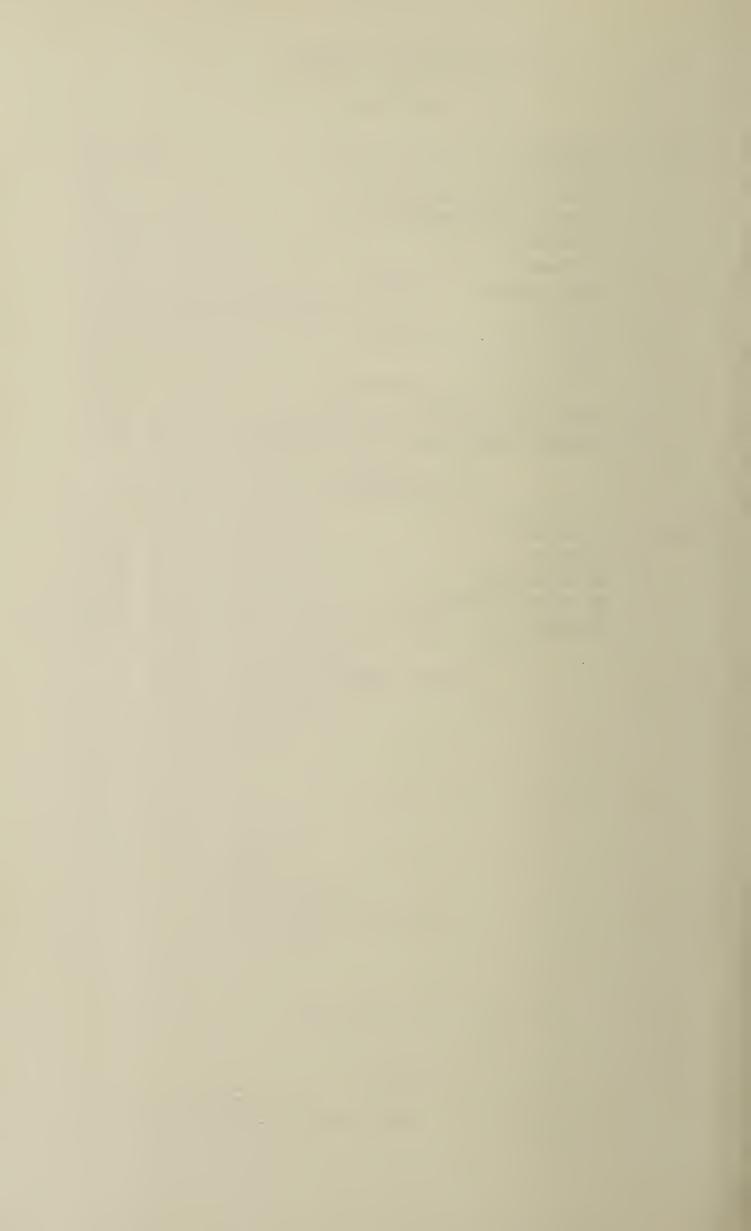
General R	eview of 1958 and	1959	•	•	•		pa	ge 1
	I	PART	II					
Chanter 1	Population							5
•	~	iges an	id La	bour	Orga	nisatio	on.	5
		_				•		9
4				•	•	•	•	17
	•		•	•	•	•		18
6	Production .	•	•	•	•		•	20
7	Social Services	•	•	•			•	22
8	Legislation .			•	•		•	30
9	Justice, Police an	d Pris	ons	•	•	•	•	31
10	Public Utilities a	nd Pul	blic W	Vorks	•	•	•	35
11	Communications	•		•	•	•	•	36
12	Press, Broadcasti	ing and	d Filn	ns	•	•	•	38
13	Local Forces		•	•	•	•	•	39
14	General .	•	•	•	•	•	•	40
	P	PART	III					
Chanter 1	Geography							42
*		•	•	•	•	•	•	48
		•	•	•	•	•	•	54
		asures	•	•	•		•	55
						•	•	55
PART II Chapter 1 Population								
	_ 1	PART	I					
General R	eview of 1958 and	1959	•	•	•	•	•	57

CONTENTS—continued

PART II

Chapter	1	Population	•		page	58
•	2	Occupations and Wages .	•		•	58
	3	Public Finance and Taxation.	•	•	•	58
	4	Currency and Banking	•	•		59
	5	Commerce	•	•		59
	6	Production				61
	7	Social Services	•			62
	8	Legislation	•	•	•	63
	9	Justice, Police and Prisons .				64
1	0	Public Utilities				64
1	1	Communications and Transport	•			64
1	2	Meteorological Services .	•	•	•	65
1	13	Falkland Islands Dependencies Surv	vey	•	•	67
		PART III				
Chapter	1	Geography	•	•		74
7	2	History				79
	3	Administration			•	83
	4	Weights and Measures	•	•	•	84
	5	Reading List	•	•	•	84

Maps at end



The Colony

PART I

General Review of 1958 and 1959

THE Colony depends for its existence on the sheep-farming industry, and for that reason the substantial drop in the price of wool from 64.53d. in 1957 to 41.41d. in the following year was the most important single event in the period covered by this review. Farm incomes and Government revenue both suffered severely, and the effects would have been more serious and more widely felt had it not been for the reserves built up by the industry and by Government when prices were very much higher, and for the fact that prices recovered a little in 1959, when they averaged 47.94d.

The scheme to link the larger settlements of the Camp by unsurfaced tracks has been abandoned. As a compromise between building all-weather roads at great cost and simply improving by degrees the easier natural routes the Camp scheme was not successful. On the other hand, it would not be right to say that the scheme was an unmitigated failure, for at least it seems to have done something to spark interest in more movement between Camp stations: the increasing number of vehicles and, more particularly, motor cycles, now being imported into the Colony is helping to make Camp life more interesting and less isolated.

The new water filtration plant at Moody Valley, near Stanely, was opened in April, 1958, and has proved entirely satisfactory. It is now a little difficult to recall that before the plant was built Stanley was on more than one occasion down to its last few hours' supply of water.

Work on re-surfacing the roads in Stanley in tar macadam went ahead steadily during the period under review, and the renewal and laying of underground ducts for water and sewage connections were carried out concurrently with the reconstruction of the roads. Work was halted after the departure from the Colony in August, 1959, of the 22 workmen from Germany who were engaged for the Stanley

roads and filtration plant projects. Plans were, however, made for continuing the project early in 1960.

The ground work of the topographical survey of the Falkland Islands, which began with the aerial survey in 1957 by Hunting Aero Survey, was almost completed by the end of 1959. The final results will be worked out in the Directorate of Overseas Surveys, and then a start can be made on the production of the first topographical map of the islands.

Important experimental work in the introduction and planting of grasses and clovers of higher nutritional value than the ordinary grass cover of the Falkland Islands was done by the Falkland Islands Company on their land in Lafonia, and by the management of Roy Cove farm in the West Falklands. It has for some time been Government's intention to arrange for a pasture agronomist, to examine the problem of improving the pastures of the Falkland Islands, but action was deferred to allow time for the work in Lafonia and the West Falklands to show results.

During the latter part of 1959 a start was made on two important public health projects. Firstly, in August the Medical Department began a programme of inoculating every one in the Falkland Islands within the age groups generally susceptible to poliomyelitis and by the end of the year just over 900 people, the majority under the age of 21, had been given a second polio injection. Secondly, work started in July, 1959, on an ophthalmic survey throughout the Falkland Islands. This was the first such survey to be undertaken in the Falklands and even in its early stages it quickly confirmed the belief that there was a good deal of useful work for the ophthalmic surgeon who was especially engaged for the project.

The Secretariat and Treasury Offices were extensively damaged by fire in March, 1959. Fortunately most of the records, including the older records of historical interest, were saved. The offices have now been rebuilt and extended to include a complete second storey, and two other Government departments have moved into the building.

A particularly unsatisfactory feature during this period was the repeated violation of incoming mails, and for a time practically every mail that reached the Colony had been violated, bags rifled, and much of value stolen. By the end of 1959 no solution or explanation of this very disturbing state of affairs had been found and the violations have continued.

Ordinary revenue during the financial year 1957-58 amounted to £267,135 which fell short of the approved estimate by £27,452.

During 1958-59 ordinary revenue amounted to £288,154, which was £15,769 more than was estimated. Ordinary expenditure in 1957-58 at £232,836 was less than the approved estimate by £16,683 and in 1958-59 ordinary expenditure amounted to £245,444, which was £21,399 less than the approved estimate.

The following table shows Colonial Development and Welfare schemes in progress during the period under review, and the amount spent on each scheme both from Colonial Development and Welfare funds and from local funds.

Colonial Development and Welfare Schemes

Total Expenditure for the years	C.D. and W.	पर	1,475	26,183	17,529	4,448	£49,635
Total Expendit	Colony	3	1	23,695	l	9,261	£32,956
59	C.D. and W. Expenditure	भ	1	14,539	1	1	£14,539
1958–59	Colony Expenditure	भ		18,216	[-	£18,216
1957–58	C.D. and W. Expenditure	£	1,475	11,644	17,529	4,448	£35,096
19	Colony Expenditure	ધ્ય	[5,479	1	9,261	£14,740
Scheme	No.		D970A	D2959 D2959A	D2600A D2600B D2600B	D2958	
Head			Camp Education .	Roads	Aerial Survey	Stanley Water Supply .	

PART II

Chapter 1: Population

At the last census taken on 28th March, 1953, the population of the Colony was 2,230, made up as follows:

Stanley Other districts, East Falklands West Falklands		Males 557 410 279	Females 578 232 174	Total 1,135 642 453
TOTAL	•	1,246	984	2,230

The total population at previous censuses was:

1921	•			•	•	2,094
1931	•	•	•			2,392
1946	•			•	•	2,239

The population is almost entirely of British origin. On 31st December, 1959, the population numbered 2,173 (2,238)*, of whom 1,187 (1,240) were males and 986 (998) females. The density of population is approximately one person to every two square miles. About half the inhabitants live in Stanley, while the rest are divided, more or less equally, between the East and West Falklands. The number of births registered in 1959 was 41 (46), of which 23 (15) were male and 18 (31) female children. There were during the year 18 (17) marriages, 28 (21) deaths, of which 0 (2) were infants under two years of age. Two hundred and fifty-seven (274) persons arrived in the Colony and 335 (314) left. The total population has decreased over the last 25 years by about 10.5 per cent., though the population of Stanley shows a slight increase.

Chapter 2: Occupations, Wages and Labour Organisation

EMPLOYMENT

Sheep farming, the principal industry, employs approximately 500 men. Government and the Falkland Islands Company Limited are the main employers of labour in Stanley. The former employed an average of 52 men on hourly wages during 1959, and the latter employed some 90 men. The 22 workmen from Germany who were engaged on the Stanley roads and water filtration projects left the

^{*} Figures for 1958 are in brackets.

Colony in August, 1959. A few artisans were engaged under contract from the United Kingdom on behalf of the Public Works Department. A number of farms also found it necessary to recruit men from the United Kingdom to work as shepherds and navvies in the Camp. Several aliens and a family from Tristan da Cunha were engaged for similar work during the period under review.

The general shortage of labour continued and there was no unemployment.

WAGES AND CONDITIONS OF EMPLOYMENT

Stanley

In 1959 wages were paid at the following rates:

Unskilled labourers—£6 7s. 6d. per week.

Skilled labourers—from £6 11s. 3d. to £7 11s. 11d. per week.

Artisans—£7 15s. 8d. per week.

A five-and-a-half-day week of 45 hours was worked. Time and a half was paid for overtime, with double time for work on Sundays and public holidays, of which there are seven each year. Hourly workers were granted a paid holiday of two weeks (90 hours) annually. There was no night work except in essential services.

The Camp

In the Camp general labourers, termed navvies, received £20 12s. 6d. per month on the West Falkland and £20 2s. 6d. on the East Falkland. Shepherds living in the settlements received £22 2s. 6d. and £21 12s. 6d. per month respectively, while those living outside the settlements received an additional £2 per month. In addition, labourers and shepherds received free quarters, fuel, meat and milk. Extra bonuses were paid for shearing, while labourers and shepherds were able to add to their earnings by contract work such as fencing and peat cutting. All Camp employees were paid monthly. An average of 45 hours weekly was worked, with Saturday afternoons and Sundays as rest days. Employees in the Camp were given 15 days holiday annually, which included the seven public holidays.

COST OF LIVING

Mutton is the staple meat; the supply of fresh fish, poultry, pork and beef is irregular. The wild Upland Goose is eaten at all seasons and gives some variety to a restricted diet. Locally grown vegetables are not easily obtained and the majority of householders grow their own.

One hotel and a few boarding houses in Stanley offer varying degrees of comfort at terms ranging from 35s. to 80s. a week.

Several householders are also willing to take one or two paying guests. Rents for furnished houses vary from £5 to £10 a month.

The rents of unfurnished houses range from £3 a month. In the majority of cases Government provides houses with basic furniture for its overseas officials at rents related to the size and condition of the houses and usually approximating to 5 per cent. of the officials' salaries. Houses, if not so obtained, are very difficult to rent and relatively expensive to buy.

The cost of living remained practically unchanged during 1958 and 1959:

The following were the prices of the more important commodities in December, 1958, and December, 1959:

2000out,	, 1,00,	1958	1959
Bread .		1s. per 2-lb. loaf.	1s. per 2-lb. loaf.
Butter (imported	۲)	3s. 2d. per $\frac{1}{2}$ kilo.	5s. $10d$. per $\frac{1}{2}$ kilo.
Margarine Margarine	u) .	2s. 11d. per lb.	1s. 11d. per lb.
Coffee .	•	3s. 9d. per lb.	5s. 5d. per lb.
Tea .	•	5s. per lb.	4s. 11d. per lb.
Eggs .	•	4s. per doz.	4s. per doz.
Flour .	•	$3\frac{1}{2}d$. per lb.	$5\frac{1}{2}d$. per lb.
Meat:	•	2 ga. pci 10.	2 2 4 . por 10 .
Mutton		6d. per lb.	6d. per lb.
Beef .		8d. per lb.	8d. per lb.
Bacon .		3s. 4d. per lb.	5s. 4d. per lb.
Ham .		5s. 9d. per lb.	8s. 5d. per lb.
Pork .		2s. 6d. per lb.	2s. 6d. per lb.
Milk .		6d. per pint.	6d. per pint.
Jam .		2s. 7d.–5s. 2d. per 2-lb.	2s. $7d5s.$ 2d. per 2-lb.
Sugar .		$9\frac{1}{2}d$. per lb.	$8\frac{1}{2}d$. per lb.
Vegetables:		- ·	
Onions (impo	rted) .	10 <i>d</i> . per lb.	$7\frac{1}{2}d$. per lb.
Potatoes (imp	orted)	3d. per lb.	$6\frac{1}{2}d$. per lb.
Dried Fruit:			
Sultanas		2s. 6d. per lb.	2s. 7d. per lb.
Currants		2s. 4d. per lb.	2s. 1d. per lb.
Raisins		2s. 2d. per lb.	2s. 1d. per lb.
Porridge Oats		1s. 4d. per small pkt.	3s. 4d. per large pkt.
Cereals .		1s. 0d.–3s. 1d. per pkt.	1s. 11d.—4s. 1d. per pkt.
Cigarettes		7s. 6d.–9s. 2d. per 100.	3s. 11d.–5s. 2d. per 50
Tobacco.		20s. 5d.–35s. 5d. per lb.	25s. 0d.–54s. 6d. per lb.
Alcohol:			22 11 1 20 4 1
Whisky		24s. 0d.–36s. 6d. per bot.	22s. 11d.–28s. 4d. per bot.
Brandy .		21s. 7d.–48s. 5d. per bot.	20s. 4d.–32s. 0d. per bot.
Gin .		19s. 6d.–23s. 9d. per bot.	18s. 10d. per bot.
Beer .		18s. 5d.–20s. 6d. per doz.	16s. 0d.–20s. 8d. per doz.
D 65		small bots.	small bots.
Paraffin .	•	4s. 3d. per gal.	4s. 2d. per gal.
Petrol .		4s. 5d. per gal.	4s. 8d. per gal.
Electricity	•	$4\frac{1}{2}d$. per unit.	$4\frac{1}{2}d$. per unit.

An important item in the domestic economy is peat, the only fuel generally available, which is sold by the cart-load. A lorry-load (three cart-loads) costs 40s. and a year's supply averages 15 to 40

loads, according to the size of the house, the number of fires, and the quality of the peat. The majority of the local inhabitants cut and stack their own peat and have only the expense of carting it from the peat-bank. These banks are moving further from Stanley as the years go by, and in the Camp some settlements have had difficulty in obtaining a good supply.

LABOUR DEPARTMENT

There is no Labour Department in the Colony.

LABOUR RELATIONS

There were two trade unions, the Falkland Islands Labour Federation (general) and the Union of Carpenters, Shipwrights and Joiners. The former had 550 paid-up members with a full-time secretary and an assistant secretary, and the latter had 11 members.

The Labour Federation meets annually with the Sheepowners' Association to draw up the yearly agreement between employers and workers in the Camp. There were no trade disputes and no working-time was lost.

A Civil Servants' Association was formed in 1948 with the object of improving the conditions of service of locally recruited officers. In 1956 the Association extended its activities by including all civil servants paid from "Personal Emoluments," and became affiliated with the Colonial Civil Servants' Association in the United Kingdom. The Association did not meet during 1959, but the interests of all Government servants were looked after by a representative council elected in 1958.

No labour legislation was enacted.

SAFETY, HEALTH AND WELFARE

There are no factories or industries in the Colony other than sheep farming, and consequently there is no legislation dealing with safety, health and welfare in work places. Accidents at work come within the provisions of the Workmen's Compensation Ordinance, enacted in 1937, which provides for the payment of compensation to workmen for injuries suffered in the course of their employment. A revision of this Ordinance is planned. There is no legislation or other provision for the payment of unemployment benefits.

INDUSTRIAL TRAINING

Apprentices are indentured in the building and allied trades and as W/T operators. An Apprenticeship Board was formed by Government in 1955. The members of the Board comprise nominees of the employers and the trade unions, and the Superintendent of Education. The purpose of the Board is to standardise the forms of

indenture and advise on pay, working conditions, and training, and also to act as arbiter in any dispute that might arise and to concern itself with the welfare of apprentices.

Chapter 3: Public Finance and Taxation

REVENUE and expenditure during the last three financial years were as follows:

Year			Reve	nue	Expenditure				
1	eur		Ordinary	Total	Ordinary	Total			
1956-57 . 1957-58 . 1958-59 .	•	•	£ 243,588 267,135 288,154	£ 251,649 326,797 306,156	£ 243,476 232,836 245,444	£ 315,915 334,462 298,503			

The main heads of revenue and expenditure were as follows:

		Re	venue	?							
					1956–57	1957–58	1958-59				
					£	£	£				
Aviation	•	•			8,598	5,720	8,678				
Customs	•		•	•	43,675	76,723	55,431				
Dependencies contribution	to th	e cost	t of t	he		ŕ					
Central Administration	•		•	•	10,000	10,000	10,000				
Electricity	•	•	•	•	13,609	16,370	18,005				
Interest	•	•	•	•	23,618	22,781	21,718				
Internal Revenue .	•			•	99,736	90,965	128,262				
Posts and Telegraphs	•		•	•	16,088	18,452	14,835				
Colonial Development and	Welfa	are	•		8,061	59,662	18,002				
Expenditure 1956–57 1957–58 1958–59											
		Lxpc	nan	, с	1956_57	1957_58	1958_50				
					£	£	£				
The Governor					6,285	7,131	6,732				
Aviation	•	•	•	•	17,055	16,957	14,024				
Customs and Harbour	•	•	•	•	7,317	8,389	8,254				
Education	•	•	•	•	18,132	25,514	32,367				
Medical	•	•	•	•	24,190	25,570	26,089				
Miscellaneous	•	•	•	•	41,523	32,633	35,876				
Pensions and Gratuities	•	•	•	•	8,799	6,730	11,778				
Police and Prisons .	•		•		3,784	4,722	4,426				
Posts and Telegraphs	•	•	•	•	26,042	36,779	39,098				
Power and Electrical	•	•	•		20,923	10,622	14,316				
Public Works	•		•	į	8,599	8,812	8,923				
Public Works Recurrent			•	•	38,934	25,956	21,946				
Secretariat and Treasury				•	12,997	16,847	15,814				
Special Expenditure including	ng Co	lonial	Deve	21-	,	20,000	22,021				
opment and Welfare Sch					72,439	101,626	53,060				
opinion with the contract of the					2,.02		=0				

The statements of Assets and Liabilities at 30th June, 1958, and 30th June, 1959, are shown on pages 10 and 13. There is no public debt.

Statement of Assets and

	LIABII	ITI	ES				•		
		JI I I .		£	s.	d.	£	s.	d.
DEPOSIT ACCOUNTS:				•	•		~		
Postal Monies	•	•		2,028		7			
Miscellaneous	•	•	•	24,182	5	7	26,211	3	2
Funds:			_				20,211	3	4
Reserve Fund Renewals Funds:	•	•	•	263,245	17	9			
Aviation	12,622	19	1						
Marine	13,658								
Power Station	14,571	7	6	40.052	4	4			
Oil Stocks Replacement Fu Special Funds:	nd .	•	•	40,853 395	4	4 2			
Savings Bank Government Employees'	999,690	3	0						
Provident	6,995	2	6						
Note Security Old Age Pensions Equal-	94,356	8	8						
isation	55,847	19	8 1	,156,889	13	10			
Other Funds:				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10	10			
Land Sales	271,490		0						
Workmen's Compensatio	n 3,923	10	4	055 410	4.4				
			<u> </u>	275,413	11	4	1,736,797	R	5
Remittances		•					13,388		5
General Revenue Balance:	1.6			40.064	10	2			
Balance at 1st July, 1957		•	•	40,264		3			
Add Depreciation of Inve	estments	•	•_	1,827	0	3			
· ·				42,091	19	6			
Add Deficit year ending 3	30th June,	1958	•	7,665	8	3			
Balance, 30th June, 1958	Deficit	•	•				49,757	7	9
						1	£1, 72 6,639	9	1
									_

The above statement does not include a sum of £3,466 10s. 11d. due from Development and Welfare Schemes:

	£	s.	d.
D 970 A	42	0	0
D2600	27	15	6
D2958	35	0	0
D2959	3,361	15	5
	£3,466	10	11

Liabilities at 30th June, 1958

		ASSETS		£	s.	d.	£	s.	d.
Cash:							~		٠.
Treasury			•	30,101	11	3			
Crown Agents .	•		•	707		9			
Joint Consolidated Fund	•	• •	•	11,000	0	0	41,808	12	Λ
Investments:			_				41,000	12	U _
Surplus Funds .				24,191	17	8			
Reserve Fund .				209,226		5			
Renéwals Funds:	Ť			,					
Aviation		12,568 19	3						
Marine		12,470 2	3 2						
Power Station .		14,233 15					•		
				39,272	17	0			
Special Funds:									
Savings Bank .		1,037,645 1	1						
Government Employees	s'								
Provident		7,804 3	8						
Note Security .		61,015 14	5						
Old Age Pensions Equal	1-								
isation		54,423 19	2						
			1	,160,888	18	4			
Other Funds:			_						
Land Sales	•	234,326 16	7						
Workmen's Compensation	or	3,563 19	4	*** ***					
				237,890	15	11	1 (71 471	_	A
							1,671,471		4
Advances	•	• •	•				13,255	_	5
Remittances	•	• •	•				104	0	4

£1,726,639 9 1

H.M. Government in respect of under issues on the following Colonial

Statement of Assets and

	LIABI	LITI	ES						
				£	s.	d.	£	s.	d.
DEPOSIT ACCOUNTS:				2 204	10				
Postal Monies	•	•	•	2,284	19	4			
Wireless Telegraph Monies Miscellaneous	•	•	•	1,911 17,429	9	0			
wiscenaneous	•	•		17,727			21,625	11	0
Funds:							21,020	**	
Reserve			•	245,030	2	0			
Renewals:	46.500								
Aviation	16,589	8	1						
Marine	15,122 17,202	12	1						
Power Station	17,202	14	4	48,914	7	6			
Oil Stocks Replacement .				3,376					
Special:				0,070					
Savings Bank	1,058,878	1	5						
Government Employees'									
Provident	7,874		6						
Note Security	91,283	12	6						
Old Age Pensions Equalisation	67,509	10	7						
isation	01,505	17		,225,546	1	0			
Other:			•	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		v			
Land Sales	271,599	6	11						
Workmen's Compensation	4,174	11	5						
				275,773	18	4			
Danittanasa			-				1,798,640		
Remittances	•	•	•				24,488	3	1
Balance at 1st July, 1958	deficit			49,757	7	9			
Deduct Appreciation of In		· S	•	10,572		10			
	•	_	_						
				39,185					
Deduct Surplus year ending	g 30th Jur	ie, 19	959	25,868	14	11			
Balance, 30th June, 1959	Deficit	•					13,316	10	0
						4	£1,831,438	0	10

The above statement does not include a sum of £2 15s. 6d. due from Welfare Scheme D.2600.

Liabilities at 30th June, 1959

	ASS	ETS	5						
CASH:				£	S.	d.	£	S.	d,
Treasury		•	•	23,012		6			
Crown Agents Joint Consolidated Fund .	•	•	•	243 92,000		10			
some consondated fund.	•	•	•	72,000			115,256	11	4
INVESTMENTS:							110,200	A K	•
Surplus Funds	•	•	•	24,632 212,455	3	4			
Reserve Fund	•	•	•	212,455	2	8			
Aviation	16,752	5	11						
Marine	14,266								
Power Station	17,094	10	10						
Special Funds:				48,113	13	5			
	1,041,957	2	4						
Government Employees'	1,011,757	_	•						
Provident	8,104	3	6						
Note Security	62,081	7	2						
Old Age Pensions Equalisation	62,836	2	4						
isation ,	02,030	<u>.</u>		,174,978	16	4			
Other Funds:				.,,,,,,,	10	~च			
Land Sales	240,329		0						
Workmen's Compensation	3,836	2	8	011165	4 ~*	0			
				244,165	13	8	1,704,345	11	5
Advances			_				11,156		5
Remittances	•						679	7	ĺ

£1,831,438 0 10

H.M. Government in respect of under issues on Colonial Development and

TAXATION

The main heads of taxation were customs duties on imports and exports and income tax.

Customs Tariff

Import duties were payable at the following rates:

Wines: General, 6s. 6d. per gallon in bulk.

Commonwealth, 4s. 6d. per gallon in bulk. General, 14s. 3d. per dozen quart bottles.

Commonwealth, 9s. 9d. per dozen quart bottles.

Spirits: 52s. per gallon, with the exception of rum which was taxed at 36s. per gallon.

Malt liquors: 1s. 2d. per gallon.

Tobacco: General, 6s. per lb.

Commonwealth, 5s. 7d. per lb.

Cigarettes: General, 10s. per lb.

Commonwealth, 9s. 6d. per lb.

Matches: General, 10s. per gross boxes.

Commonwealth, 5s. per gross boxes.

Export duties during 1958-59 were payable at the following rates:

Wool: Ad valorem duty; $1\frac{1}{2}d$. per lb. for the 1958-59 clip.

Tallow, hides and skins: $2\frac{1}{2}$ per cent. of the selling price.

Whale and seal oil: 6d. per barrel of 40 gallons for each £5 of the average market price per ton of first-grade oil.

Other whale and seal products: 6d. per 100 lb.

Revenue from customs duties was:

					1957–58	1958–59
<i>Imports</i>					£	£
Wines					340	478
Spirits	•				18,902	19,953
Malt Liqu	ors				738	1,028
Tobaccos a	and C	igaret	tes		7,509	4,650
Matches	•		•	•	164	152
Exports						
Ŵool			•		47,657	28,453
Tallow		•			36	4
Hides and	Skins		•		1,375	713

Income Tax

The following were the rates on taxable income for the years 1958 and 1959:

Companies: 3s. 6d. per £ (flat rate).

Individuals: first £100 . . . Nil.

next £100 . . . 1s. per £
next £250 . . . 2s. per £
next £250 . . . 2s. 6d. per £

Allowances

Married person: £100.

Children under 16 years: £100 each.

Children receiving full-time education abroad: £125.

Earned income: one-fifth (maximum £400).

Dependent relative: £25.

Insurance or pension fund contributions: Premiums or contributions (maximum one-sixth of chargeable income).

Revenue received during 1957-58:

Companies £58,085, individuals £28,785.

Revenue received during 1958-59:

Companies £76,213, individuals £38,717.

The following tabular statement shows the incidence of tax on individuals at varying rates of income*:

Annual Income	Single	Married	Married with 1 child	Married with 2 children	Married with 3 children	Married with 4 children
£ 200 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300 1,400 1,500 1,600 1,700 1,800 1,900 2,000	£ s. d. 2 14 0 8 8 0 16 8 0 24 8 0 33 0 0 43 0 0 53 0 0 63 7 0 75 7 0 87 7 0 99 9 0 113 9 0 127 9 0 141 9 0 155 9 0 169 9 0 183 9 0 197 9 0 211 9 0	£ s. d. 1 14 0 6 8 0 14 8 0 22 8 0 30 10 0 40 10 0 50 10 0 60 10 0 72 7 0 84 7 0 96 7 0 109 19 0 123 19 0 137 19 0 151 19 0 165 19 0 179 19 0 193 19 0	£ s. d.	£ s. d.	£ s. d.	£ s. d.

^{*} An allowance of £6 has been made in each case to cover insurance or pension fund contributions.

Estate Duty

Estate duty in accordance with the schedule below was payable whether or not the deceased died in the Colony, but only in respect

of property in the Colony. There is provision in the Ordinance for relief in respect of quick successions.

Rate of Estate Duty

		•					
	£			£		Rate of	Duty
Not exceeding	ng 100					Nil.	
Exceeding	100	but not	exceeding	300	£1	10s. 0d.	(fixed)
**	300	,,	,,	500	£2	10s. 0d.	(fixed)
>>	500	"	,,	1,000	1	per cent	•
,,	1,000	,,	,,	2,000	2	,,	
,,	2,000	,,	,,	3,000	3	,,	
,,	3,000	,,	,,	5,000	4	,,	
,,	5,000	,,	,,	7,500	5	,,	
,,	7,500	,,	,,	10,000	6	33	
,,	10,000	,,	,,	12,500	7	,,,	
,,	12,500	,,	,,	15,000	8	,,	
,,	15,000	,,	,,	20,000	10	,,	
,,	20,000	,,	,,	25,000	12	,,	
,,	25,000	,,	,,	30,000	14	,,	
,,	30,000	,,	,,	35,000	16	,,	
,,	35,000	,,	,,	40,000	18	,,	
,,	40,000	,,	,,	45,000	20	,,	
,,	45,000	,,	,,	50,000	22	,,	
,,	50,000	,,	;,	60,000	24	,,	
,,	60,000	,,	,,	75,000	27	,,	
**	75,000	,,	,,	100,000	30	,,	
,,	100,000	,,	,,	150,000	35	,,	
,,	150,000	,,	;;	200,000	40	,,	
,,	200,000	,,	,,	250,000	45	**	
>	250,000	,,	,,	300,000	50	:,	
:,	300,000	,,	,,	500,000	55	,,	
,,	500,000	,,	,,	750,000	60	,,	
,,	750,000		,,	1,000,000	65	,,	
	1,000,000	,,	,,	2,000,000	70	,,	
	2,000,000				75	,,	
**							

The Estate Duty (Amendment) Ordinance, 1959 abolishes estate duty on all estates valued at under £5,000, and provides that estates valued at over £40,000 shall not attract duty at a higher rate than 10 per cent. It also provides that a lower rate of duty than that leviable under the existing law shall be introduced, and it allows reliefs from estate duty similar to those allowed under equivalent English law. Under the amending law, estate duty will be payable in respect of certain classes of property which were formerly exempt from duty and in respect of movable property wherever situate provided that double taxation relief can be obtained. This Ordinance, which was enacted in December, 1959, had not been brought into force at the end of the period under review.

STANLEY TOWN COUNCIL FINANCES

Revenue accruing to the Stanley Town Council, the only local authority in the Colony, amounted to £6,492 during 1958 and £7,490 during 1959. Expenditure during 1958 was £6,090 and during 1959 was £5,685.

The main heads of revenue were:

	1958	1959
	£	£
Government Grant (Charitable		~
Relief)	800	800
General Rates (including con-		
tribution of £825 by Govern-		
ment)	3,440	3,407
Water Rate	595	624
Hire of Town Hall	947	1,007
Government grant for Fire Bri-		,
gade Equipment		500
Sale of Lorry		500

The main heads of expenditure were:

				1958	1959
				£	£
Town Clerk .			•	420	421
Cemetery .				489	355
Fire Brigade .	•			530	329
Library .				176	173
Charitable Relief	•	•		729	860
Scavenging .				1,818	1,750
Street Lighting		•		447	432
Town Hall .			•	851	968

Chapter 4: Currency and Banking

THE legal tender of the Colony consists of Falkland Islands Government currency notes of £5, £1 and 10s. denominations and United Kingdom coinage. On 31st December, 1959, the note issue in circulation was £85,491 10s. 0d.

There are no commercial banks in the Colony but the Treasury remits funds abroad on payment of a commission of 1 per cent. A similar service is also provided by the Falkland Islands Trading Company, Limited, and the Estate Louis Williams, who operate agencies of Lloyds Bank Limited and Hambros Bank respectively.

Deposits in the Government Savings Bank amounted to £1,071,109 5s. 2d. at 30th June, 1959, and the number of depositors' accounts open was 1,884. At the same date in 1958 deposits totalled £1,057,784 9s. 3d. and the number of depositors was 1,960. Interest on deposits is paid at the rate of $2\frac{1}{2}$ per cent. per annum.

Chapter 5: Commerce

IMPORTS

WITH the exception of meat and a limited quantity of vegetables and berry fruits, practically the whole of the Colony's requirements in foodstuffs is imported.

The value of imports and the sources of supply were as follows:

Value of Imports

	1958	1959
Food Beverages and tobacco Crude materials, inedible, except fuels Mineral fuels, lubricants and related materials Animal and vegetable oils and fats Chemicals Manufactured goods classified chiefly by materials Machinery and transport equipment Miscellaneous manufactured articles Miscellaneous transactions and commodities.	£ 75,258 41,400 13,063 27,899 185 25,821 110,531 109,097 75,777 11,761	£ 83,047 46,083 18,354 15,942 194 24,510 82,665 63,746 74,914 6,155
TOTAL IMPORTS	£490,792	£415,610

Principal Imports and Sources of Supply, 1958

Item .	Value	Quantity	Principal Supplying Countries
Provisions	£ 71,885	717 tons	United Kingdom £43,317, Argentine £21,173, Uruguay £4,515
Alcoholic beverages .	25,870	40,859 gal.	United Kingdom £24,526, Uruguay £474.
Tobacco manufactures .	13,523	14,808 lb.	United Kingdom £13,523.
Petroleum products .	22,008	481 tons	United Kingdom £5,667, Uruguay £16,341.
Manufactures of metals. Road motor vehicles and	43,193	_	United Kingdom £43,040.
spare parts	27,381		United Kingdom £27,069.
Clothing	24,477		United Kingdom £23,952.
Electric machinery, appa-			
ratus and appliances.	20,789		United Kingdom £16,091.

Principal Imports and Sources of Supply, 1959

Item	Value	Quantity	Principal Supplying Countries
Provisions	£ 72,919	624 tons	United Kingdom £45,372, Argentine £17,643, Uruguay £4,960.
Alcoholic beverages .	30,506	36,206 gal.	United Kingdom £28,731.
Tobacco manufactures .	13,806	15,801 lb.	United Kingdom £13,730.
Timber	25,337	_	Chile £12,490,
Petroleum products .	15,253	283 tons	United Kingdom £11,415. Uruguay £12,137, United
2.5			Kingdom £3,116.
Manufactures of metals.	23,861		United Kingdom £23,660.
Road motor vehicles and			
spare parts	28,100		United Kingdom £28,044.
Clothing	26,443		United Kingdom £26,317.
Electric machinery, appa-			,
ratus and appliances.	16,819		United Kingdom £12,554.

Sources of Import

				1958	1959
Commonwealth	•	•	•	82.36%	80.83 %
Foreign countries		•	•	17.64%	19.17%

Principal Supplying Countries

							1958	1959
							£	£
United King	dom	•	•	•	•	•	384,038	329,349
Other parts	of th	e Con	nmon	wealth	•	•	20,190	6,583
Argentine	•	•		•	•	•	25,793	28,019
Chile				•	•	•	227	17,780
Denmark						•	4,507	137
Germany	•			•		•	11,114	8,343
Holland		•	•			•	2,811	1,637
Switzerland			•		•		7,379	2,352
Sweden		•	•			•	9,064	154
U.S.A.		•		•			580	532
Uruguay	•		•	•	•	•	23,539	19,269

All goods imported, except on Government account, are distributed by local traders. Imports from the dollar area consist mainly of spare parts for the two Beaver aircraft and for American-made wind generators.

EXPORTS

The value, quantities and markets for exports were as follows:

		Valu	e of E	Zxpo	rts	:	
				•		1958 £	1959 £
Wool						785,282	904,415
Hides and ski	ns .		•			24,148	25,094
Tallow					•	255	325
Livestock		•		•		1,031	913
Other articles	•	•		•	•	3	105
	TOTAL	EXPO	RTS			810,719	930,852
	TOTAL	RE-EX	PORTS	•		13,393	9,600
	TOTAL			•	•	£824,112	£940,452

Note: All values are based on selling price.

Principal Exports

Item	Val	lue		Ou	antity	Destination in both years
	1958	1959	Unit	1958	1959	•
Wool	£785,282	£904,415	lb.	4,551,347	4,545,719	United Kingdom
Hides and skins	£24,148	£25,094	cwt.	3,214	3,356	United Kingdom
Livestock .	£1,031	£913	sheep	1,031	913	Chile

Note: All values are based on selling price.

Chapter 6: Production

ALL land, with the exception of some 41,500 acres remaining to the Crown, is freehold, and is divided into sheep farms varying in size from 3,600 to 161,000 acres, and carrying up to 36,000 sheep, approximately one sheep to every five acres.

The Falkland Islands Company, Limited, which owns a number of farms, holds freehold land amounting to approximately 1,229,000 acres and carrying 277,897 sheep.

Crown land may be rented.

Resources at present undeveloped are the extensive kelp (macrocystis) beds, whales which are found in the surrounding waters, deep-sea fishing and sealing.

AGRICULTURE AND ANIMAL HUSBANDRY

No crops are grown in the Colony, with the exception of a limited supply of oaten hay.

The staff of the Agricultural Department comprise two Agricultural and Livestock Assistants and two labourers. One of the Agricultural and Livestock Assistants is Officer in Charge of the Department; the other has, for most of the period under review, been seconded for service with the surveyors engaged on the topographical survey of the Colony and, therefore, has not been available to the Department.

The policy of the Agricultural Department is:

- (i) to co-operate with the sheep farmers in maintaining a high standard of health in their flocks by combating and preventing disease;
- (ii) to control the importation of livestock and agricultural products;
- (iii) to advise stock owners in all matters connected with animal husbandry; and
- (iv) to collect and produce agricultural and livestock statistics.

In 1958 the Colony had 611,421 sheep, 12,059 cattle, 3,099 horses and 56 swine. The numbers in 1959 were 620,642, 11,417, 3,255 and 48 respectively.

Sheep and cattle are distributed among farms in the East and West Falklands. Methods of keeping livestock are uniform throughout the Colony.

The average weight of wool exported annually over the last five years was 4,468,750 lb. The wool clips in 1958 and 1959 were exported through the Falkland Islands Company, Limited.

No dairy produce was exported. An occasional shipment of mutton was made to the whaling establishments in South Georgia, and some sheep were sold to meat-freezing plants in Southern Chile.

The Colony is self-supporting in mutton and beef, supplies for Stanley being obtained from various settlements. Three small dairies in Stanley supply milk to the town. Farms in the Camp have their own cows.

Details of exports of livestock products are given on page 20.

FORESTRY

There are no forests in the Colony.

FISHERIES

There is no organised fishing industry. Occasional catches of mullet and smelt were made by net hauling by part-time fishermen. All the fish caught were sold for local consumption. Trout fishing provides good sport for anglers.

MINING

There is no mining in the Falkland Islands.

MANUFACTURING INDUSTRIES

The Colony has no manufacturing industries.

CO-OPERATIVE SOCIETIES

The Government Employees' Canteen was formed in 1952 and membership is open to employees and pensioners of the Colonial Government. All members are required to take up one £10 share on joining the canteen. A maximum of 50 shares may be held.

The canteen is run on the lines of a co-operative society and imports groceries, clothing and footwear, furniture and household goods. It is managed by a committee who remain in office for three years and a full-time secretary-treasurer. Part-time storekeepers attend on five afternoons a week.

Chapter 7: Social Services

EDUCATION

Government is responsible for all education in the Colony. All education in the years under review was free, except for a nominal fee of £12 a year charged for boarding school education. Children in Stanley wishing to continue their education after reaching the age of 14 years may do so in what is known as the Continuation Class at the Senior School. There is no secondary or higher education. Bursaries are awarded to children wishing to train for teaching posts within the Department of Education. Evening classes are held each winter from May to October and are open to all who wish to attend, but apart from Government employees under the age of 18 years, whose attendance is compulsory, the response in 1958 was poor, and in 1959 frankly discouraging. Typing and shorthand classes were held each week throughout the whole of 1959.

Attendance in Stanley is compulsory for all children between the ages of 5 and 14 years and in the Camp for children between 5 and 14 years of age living within one mile, and children between 7 and 14 years of age living within two miles of a settlement school. Five travelling teachers were employed in the Camp in 1958 and eight in 1959. These teachers are each assigned a beat, and at regular intervals visit houses where there are children of school age; they stay at each house from a minimum of two to a maximum of four weeks.

There are two schools in Stanley. The Infants' School caters for children from 5 to 7 years of age. The first two classes of the Senior School are accommodated in the Infants' School building. The Senior School caters for children from 7 to 14 years and over.

The Boarding School at Darwin, East Falkland, which was opened in 1956, accommodates 39 boarders from various parts of the Camp and also caters for 11 day children. The West Falkland Boarding School, built at Port Howard and opened in 1957, caters for the educational needs of 20 day pupils, and, in the latter half of 1959, for five boarders.

The following is a summary of teachers and children in each school during the period under review:

Number	of Teachers	as at 31st	December,	1958
--------	-------------	------------	-----------	------

	Infants' School		All Range School		Boarding Schools		Camp		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Certificated: Completed Secondary School Course.		3	3	3	3	2	2		8	8
Uncertificated, but who have com- pleted Secondary School Course .		1			_	_	6		6	1
Trained (locally), but who have not completed Secondary School Course.				1		1	_			2
Untrained	_	-		1	_	_	_	1	_	2

Number of Teachers as at 31st December, 1959

	Infants' School		All Range School		Boarding Schools		Сатр		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Certificated: Completed Secondary School Course.			3	2	4	2	1		8	4
Uncertificated, but who have completed Secondary School Course .		1	_	1	_	•	8		8	2
Trained (locally), but who have not completed Secondary School Course .		1	_	1	_	_	_	1	_	3
Untrained	_	-		1	_	1	_	_	_	2

Number of Children receiving Education

			Sahaala		Enrolment		
			Schools -	Boys	Girls	Total	
On 31st December, 1958 Infants All range Boarding Full-time settlement . Part-time settlement . Camp teachers			1 1 2 1 10 8	31 42 40 44	10 64 29 57	41 106 69 101	
TOTAL			23	157	160	317	
On 31st December, 1959 Infants All range Boarding Full-time settlement . Part-time settlement . Camp teachers			1 1 2 2 2 8 10	30 44 35 35	23 65 42 43	53 109 77 78	
TOTAL	•	•	24	144	173	317	

There were 16 children (seven boys and nine girls) not receiving education in 1958 and seven children (two boys and five girls) not receiving education in 1959.

Children in the Camp not attending a boarding school are encouraged to attend school in Stanley, and a boarding allowance of £2 per month for each child is granted. This scheme now also applies to children whose parents live in South Georgia.

Places for scholarship pupils are granted each year by Dorset County Council. No scholarship was awarded in 1958, but scholarships were granted to three boys in 1959.

An Overseas Education Allowances Scheme was initiated in 1957, under which Government makes a tax-free grant of £150 for the first year, and £100 a year for the next four years, to the parents of children between the ages of 11 and 18 years who are receiving

full-time education at a school overseas, such school being approved by the Superintendent of Education. The parents of 12 children benefit from this scheme.

There was one girl of school age in South Georgia in 1958 and one boy and three girls in 1959.

The Colony's total expenditure on education in 1957-58 was £25,514 or 11 per cent. of the total expenditure of the Colony; expenditure from Colonial Development and Welfare funds was £1,475. Expenditure in 1958-59 was £32,367 or 10.8 per cent. of the total expenditure of the Colony; expenditure from Colonial Development and Welfare funds was nil.

PUBLIC HEALTH

During the period under review, the general health of the population was good. An outbreak of influenza occurred in 1959, affecting about one-tenth of the population.

Inoculations with poliomyelitis vaccine were made available during 1959 to all persons under the age of 21 years; the scheme was afterwards extended to all sections of the community, and is provided free of charge.

The ophthalmic survey of the Colony, which also began during 1959, is still in progress.

Hospital Facilities

The Colony has one hospital, which is situated in Stanley. It has 32 beds for the treatment of medical, surgical, obstetric and tuberculosis cases. There were 101 admissions to hospital in 1958 and 120 in 1959.

The following operations were performed in the hospital:

		1958	1959
Major operations		8	20
Minor operations		20	29

Ante-natal and child welfare clinics are held weekly at the hospital, and are well attended.

Mortality

There were 21 deaths in the Colony in 1958 and 28 in 1959. Diseases of the circulatory system, mainly associated with old age, were the main cause of death. There were no maternal deaths in either year.

Medical Services in the Camp

For medical purposes, the Falklands are divided into three areas: Stanley and the North Camp, Lafonia, and West Falklands. The

Senior Medical Officer and one Medical Officer are stationed in Stanley and see all patients in Stanley and the North Camp. One Medical Officer lives at Darwin, in Lafonia, and deals with medical cases in that area; the third Medical Officer is stationed at Fox Bay, on the West Falkland, and attends patients on the West Falkland and the many islands to the north and west of it.

All settlements on the main East and West islands can communicate with a doctor by telephone. All the inhabited islands are supplied with radio-telephones. Standard medical chests are provided at all settlements. The Government Air Service is available for the transport of doctors and patients. As a rule, the Camp doctors ride to their patients or travel by Land Rover but, when necessary, they are flown.

The system is practical, and efficiently meets the unusual needs of a roadless country of mountain ranges, great areas of grassland pastures, and many islands, inhabited by a widely-scattered population.

Medical Department

The staff of the Medical Department consisted of the Senior Medical Officer, three Medical Officers, three Dental Officers (two of these posts were vacant for part of the period under review), one Matron, two Nursing Sisters, one District Nurse, and six staff nurses. Two medical *locum tenens* were employed in 1958.

Other staff of the hospital consisted of one clerk, one caretaker, one cook, five maids, one laundry-maid, and one gardener.

There were no doctors or nurses working for companies and there were no private practitioners.

Expenditure on medical services (including special expenditure) during 1957-58 was £26,501. In 1958-59 it was £27,014.

Revenue	1955	1956	1957	1958	1959
Medical . Dental .	1,739 580	2,856 627	2,899 1,654	£ 3,585 1,204	£ 4,040 1,280
	£2,319	£3,483	£4,553	£4,789	£5,320

Local Authority Services

The Stanley Town Council was responsible for sewage disposal, and employed two night-soil collectors. By the end of 1959, there still remained about 30 houses without modern sanitary installations.

There were three licensed dairies in Stanley. The dairy herds are examined periodically by the Agricultural Officer, and all animals are tuberculin tested.

HOUSING AND TOWN PLANNING

The majority of the houses in the Colony are built of timber with metal outer covering; the roofs are usually of corrugated iron. Concrete block building, particularly for Government premises, is now becoming popular. Plans for all new buildings must be submitted to the Stanley Town Council for approval and must conform to the sanitation and constructional requirements of the Council. There is a shortage of housing in Stanley, caused mainly by the high cost of materials and freight and the shortage of labour.

Government maintains accommodation for most of its overseas officials. Two blocks of small houses are available for rental by the poorer members of the community. These premises are liable to inspection and the tenants must keep them in a sanitary condition. The Stanley Town Council has power to condemn houses which are unfit for habitation.

SOCIAL WELFARE AND AMENITIES

There are three places of worship: Christ Church Cathedral, consecrated in 1892, St. Mary's Roman Catholic Church, established in 1899, and the Tabernacle (United Free Church) established in 1890. Church services are relayed every Sunday evening through the broadcasting station in Stanley, for the benefit of Camp listeners.

An old age contributory pensions scheme introduced in 1952 is compulsory for all male residents in the Colony. The following weekly benefits are paid to contributors on reaching the age of 65 years: married man 30s., unmarried man or widower 20s., widow of pensioner 10s. Employees contribute 2s. weekly and employers 3s.

Children's allowances at the rate of 10s. per month for each child are granted to all parents with two or more children.

Poor relief is administered by the Stanley Town Council. The amount spent on poor relief in 1959 was £860. Accommodation for old and chronic invalids is provided in the hospital. There are no orphanages or poor law institutes.

The Stanley Benefit Club, open to all residents, is the oldest club in the Colony. The centenary of its formation was celebrated in 1959. It was formed, in July, 1859, to provide a fund for the support of members in cases of sickness or accident; it also contributes towards funeral expenses. The club's membership has fallen to 135, chiefly due to the older members dying and the lack of interest among younger people. The Stanley Benefit Club paid to its members sick and other benefits amounting to £317 in 1958 and £592 in 1959. The club's assets over liabilities on the 30th April, 1959, were £3,233.

The local branch of the Red Cross Society held its usual meetings each month. Canteens were run for visiting ships of the Royal Navy; and some members attend the hospital each week to undertake the mending of garments and linen. In 1958 the Society decided to present an ambulance to Stanley, and a public appeal to raise funds to meet the cost of purchasing the ambulance was launched in 1959 by Lady Arrowsmith, wife of the Governor and President of the Society. The fund reached the target-figure during the course of the year and the ambulance, which was purchased in England, arrived in the Colony in December, 1959.

The membership of the Girls' Life Brigade has increased during the period under review. Courses were completed in accordance with the International Headquarters Syllabuses at the advanced level in hygiene, first aid, cookery, knitting, and country dancing. Elementary standard badges were also granted in natural history, art, needlework, knitting and basketwork.

The 1st Falkland Islands Company of the Boys' Brigade was formed in 1944. Training is carried out during the winter months. Classes are held in signalling, first aid, physical training, and drill. A fourteen-day camp is held annually during the school holidays. The strength of the Company has decreased by 16 over the past two years. Lack of suitable accommodation has been one of the main causes of waning interest and the gradual decrease in membership. The Life Boys, the junior organisation of the Boys' Brigade, was formed in 1949. Meetings are held twice weekly for drill, physical training, and games. Outings are held during the summer months. The roll is now 15, a decrease of five over the past two years.

There are several clubs in Stanley, among them the Colony Club, the Falkland Club, the Working Men's Social Club, which holds an annual sports meeting for children, and the Falkland Islands Defence Force Club, membership of which is confined to past and present members of the force.

Full-bore rifle shooting held under the auspices of the Falkland Islands Defence Force Rifle Association has a good following. Annual prize meetings are held and when finances permit representative teams are sent to Bisley, England, to compete in the junior colonial competitions. Several of the teams have been successful in carrying off prizes in the past. The Association is sending their next teams to Bisley in 1960 to compete in the Centenary Meeting of the National Rifle Association of Great Britain.

There is a small-bore range in the Drill Hall and this is open to members and their wives. It is always well supported and this form of sport flourishes during the winter months. The Drill Hall is also used for badminton and table tennis. Football is the most popular outdoor sport and the club is well supported. Not only do local teams compete for a championship, but some very enjoyable games take place against teams from visiting warships.

The Cricket Club, formed in 1955, still continues to attract members, of whom there are now about 50. The pitch is matting on concrete. This must be the most southerly place where cricket is played regularly during the summer. Practices were well attended and a number of matches, mostly in "two-sweater" weather, were played against visiting ships.

An increasing interest is being taken in trout fishing. Brown trout (salmo fario) were introduced into the Colony's rivers between 1947 and 1952. These trout have over the years formed a sea-going habit, and return to the rivers to spawn. Specimens weighing 7 to 10 lb. are not uncommon. The trout fishing season opens on 1st September and closes on 30th April.

The Stanley Sports Association holds an annual meeting in December with horse racing, gymkhana and athletic events' Race meetings are also held at Darwin and at most of the principal settlements in turn on West Falkland.

The Stanley Badminton Club has a large membership and games are played in the gymnasium twice a week.

The squash court, donated by the Falkland Islands Company Limited in 1953, continues to be well used.

Darts is a popular winter game and there is a league in Stanley with nine teams. The standard of play is high.

Snooker, played at the Colony Club, the Falkland Club, the Falkland Islands Defence Force Club, and the Working Men's Social Club, has a strong following.

The Guild of Spinners, Weavers and Dyers which had 24 members at the end of 1959 now has its own room in the gymnasium. Weekly classes were held for some of the girls attending Stanley Senior School during which spinning and weaving were taught as a handicraft.

Folk dancing is held in Stanley for five months of the year in the gymnasium. The society meets once a week for two hours. Classes for members are also held. Membership is open to all over 13 years of age, and averages about 100. Members pay a subscription of 2s. and an entrance fee of 6d. each evening. Social evenings at which there was ballroom and folk dancing were a great attraction.

The Town Hall, rebuilt in 1950 with the assistance of a grant from Colonial Development and Welfare funds after being destroyed by

fire in 1944, contains a dance hall with stage, dressing rooms, refreshment room and a well stocked and patronised library. In 1958 and 1959 film shows were given in the dance hall by a private operator.

Chapter 8: Legislation

LEGISLATION enacted during the period under review included the following measures:

1958

- No. 3. The Guardianship and Custody of Children Ordinance, consolidating the law in the Colony relating to the guardianship and custody of children (previously spread over four English Acts).
- No. 5. The Old Age Pensions (Amendment) Ordinance, enabling the Governor in Council to exempt such persons or classes of persons as shall be specified in an Order in Council from liability to contribute to the Old Age Pensions Fund.
- No. 6. The Harbour (Amendment) Ordinance, providing against the discharge or escape of fuel oil or diesel oil into any harbour.

1959

- No. 4. The Foreign Judgments (Reciprocal Enforcement) Ordinance, providing, on a basis of reciprocity, for the enforcement in the Falkland Islands of the judgments of superior courts of foreign countries.
- No. 7. The Legislative Council (Elections) (Amendment) Ordinance, making provision for the preparation of registers of electors by Registration Officers without the electors first having to apply to have their names included on the electoral roll.
- No. 9. The Defence Force (Amendment) Ordinance, extending to the Colony those parts and sections of the United Kingdom Army Act, 1955, concerning discipline and the trial and punishment of military offences and billeting and requisitioning of vehicles and payment for requisitioned vehicles.
- No. 13. The Live Stock (Amendment) Ordinance, widening the definition of dipping so as to permit the introduction and use of effective methods of dipping other than by immersion.

- No. 16. The Live Stock (Amendment) (No. 2) Ordinance, consolidating the provisions of section 11 of the Live Stock Ordinance (Cap. 40), which relate to the compulsory annual dipping of sheep, with a further provision empowering the Governor in Council to vary the period within which sheep must be dipped for experimental purposes.
- No. 18. The Estate Duty (Amendment) Ordinance, exempting from estate duty estates valued at under £5,000, providing that estates valued at over £40,000 shall not attract duty at a higher rate than 10 per cent., allowing reliefs from estate duty similar to those allowed under equivalent English law, and levying duty on certain classes of property at present exempt and on movable property wherever situate provided that double taxation relief can be obtained. This Ordinance had not been brought into force at the end of 1959.
- No. 20. Application of Enactments (Amendment) Ordinance, applying the Marine Insurance Act, 1906, and the Marine Insurance (Gambling Policies) Act, 1909, to the Colony, thus bringing the law of the Colony relating to marine insurance into uniformity with that of the United Kingdom. This Ordinance had not been brought into force at the end of 1959.

Chapter 9: Justice, Police and Prisons

JUSTICE

The judicial system of the Colony is administered by a Supreme Court, with the Governor as Judge, and a Court of Summary Jurisdiction, both of which usually sit in Stanley. The Court of Summary Jurisdiction is presided over by the Magistrate or by a bench of magistrates composed of two or more Justices of the Peace. The post of Magistrate is at present held by the Colonial Secretary. The Colony retains the part-time services in England of a retired Colonial Judge as Legal Adviser.

Local ordinances and regulations are in effect. English law applies down to 1900 and subsequently by special application.

Most farm managers are Justices of the Peace, as are also certain residents in Stanley, and they have the power to deal with minor offences.

The commonest type of litigation is for recovery of debt; the most frequent offences are larceny, malicious damage and breaches of the Licensing Ordinance.

The following tables show the number of civil and criminal cases heard by the courts during 1958 and 1959:

~	• 7		
CI	vii	Court	

	1958	1959
Debt	5	16
Property Act	1	1
Marriage Act		1
Removal of disqualification for driving		3
Maintenance orders	3	1
Non-compliance with Court Order.	3	6
Adoption orders		4

Court of Summary Jurisdiction

	Cases	Heard	Disch	arged	Convicted	
	1958	1959	Adults	Juven- iles	Adults	Juven- iles
Offences against the person: Assaults	1	. 1	1	-	1	_
Offences against Property: Larceny Malicious damage .	11	4 2	5 –	- -	7 3	3
Offences against Local Ordinances: Road traffic Licensing Dangerous dogs Education Firearms	15 33 1 -	18 18 1 2	- 1 - -	- - - -	30 50 2 2 1	3
Offences against Public Order: Breach of recognizance. Assaulting constable. Resisting arrest. Obscene language. Sending false telegram.	1 1 1 -	1 - 1 1 1	- - - -		1 2 1 1 1	- - - -

Supreme Court

					1958	1959
Divorce	•				5	6
Enticement	dam	nages				1
Debt						1
Appeal			•	•	2	_
Contract			•	•		1

Types of Punishment (1958 and 1959 combined)

						*Includes 6 disqualifications from	*Indicates Prohibition Order made	under Licensing Ordinance.	ison	Orders made.			
-		٦.	1	ж	ı	1	1	1	1	Į.	ľ	ł	1
	Bound over	F.	(1	1	1	*	1	1	l			1
	Вои	M.	- 1	1	ı	*6	35*	1	ı	l	Į.	1	1
-		٦.	1	1	1	ر	1	1	· ·		1		1
	Fined	F.]	1	1	1	1	1	_	ι		1	1	1
	F	M.		7	е	30	14		_	ł	_		4
-	nt	J.	1	1	1	1	1	1	1	1	 -	1	ı
	Imprisonment	F_c	1	1	ſ	1	1	1	1	1	1	1	1
	Impr	M.	ŀ	1	1	1	1		1	1	1	1	1
-	1	J.	1	æ	1	w.	ŧ	1	1	1	1	1	1
	Convicted	F.	1	[l	ı	-	-	1	ı	1	1	1
	Co	M.		7	ω	30	46	-	-	7	_		4
	Court of	ammary sansancion	Assault	Larceny	Malicious damage .	Traffic	Licensing	Education	Firearms	Dangerous dogs .	Obscene language .	Sending false telegrams	Other cases

POLICE

The authorised strength of the Falkland Islands Police Force is seven, consisting of the Chief Constable, one sergeant, one senior constable, and four constables, all of whom are stationed in Stanley. Two constables are also stationed at South Georgia.

With the exception of the Chief Constable, members of the Force are recruited locally.

Training is carried out under the supervision of the Chief Constable.

Crime

The number of indictable offences has decreased. Juvenile delinquency has almost disappeared, only six juveniles appeared before the magistrates during the period under review.

Other Police Duties

The Chief Constable also acts as Gaoler, Immigration Officer, and Sanitary Inspector. The Police Department issues and renews firearm certificates, gun licences, driving licences, and is responsible for the registration of motor vehicles, the testing of applicants for driving licences, and the licensing of dogs.

PRISONS

There is one small prison in Stanley. The Chief Constable acts as Gaoler and other members of the Force as warders. A part-time gaol matron is employed.

Two prisoners (both males) were received during 1958 and served sentences of three months each. No prisoners were received during 1959.

There is no special provision for first offenders, recidivists, etc.

Prison discipline is governed by the Prisons Regulations.

The health of the prisoners is under the supervision of the Senior Medical Officer of the Colony. There are no facilities for the education and training of prisoners.

Prisoners are employed on work in and around the gaol, such as painting, cleaning and gardening, and are occasionally put to work in cutting peat and making concrete blocks. Prisoners receive no payment when in prison. Remission of sentence is earned at the rate of four days per month by those imprisoned for one month or over.

The Colony has no Borstal or similar institution and there is no after-care of prisoners.

Chapter 10: Public Utilities and Public Works

ELECTRICITY

A 24-hour supply is available in Stanley. The supply voltage is 230 A.C. for lighting, heating and small power, and 400 A.C. for large power. The diesel electric power station opened in 1951, has a maximum output of 550 kW. Distribution is overhead at 3.3 kv. and 230 to 400 volts. The system is 3-phase 4-wire. The power station is operated by Government.

There are 460 consumers in Stanley. Tariff is at a fixed rate of $4\frac{1}{2}d$. per unit. Major consumers are Government, the Falkland Islands Company Limited, and the Stanley Town Council.

In the Camp most of the farms have installed their own generating plants; some supply power to a single house, while others with a larger generating capacity supply the whole of a settlement. Shepherds living in isolated houses have in many cases installed their own lighting systems fed from low voltage batteries charged by wind generators.

WATER SUPPLY

The water supply in Stanley has been much improved by the construction of a completely new water purification and filtration plant. This plant was opened by the Governor, Sir Edwin Arrowsmith, in March, 1958. It ensures a sufficient supply of pure chlorinated water up to modern standards throughout the town. The source of water is the Moody Valley Stream which is some three miles to the west of the town. Water is pumped through a new pipeline into two existing reservoirs in Stanley. Storage is available for some 335,000 gallons, and many householders use rainwater tanks as reserves. Consumption averages 60,000 gallons per day.

PUBLIC WORKS

The Public Works Department is responsible for the care and maintenance of Government buildings, the construction of new Government works, and the maintenance of Stanley roads and water supply.

The staff in 1959 numbered 55, of whom two were artisans from the United Kingdom, one was a local tradesman, and the remainder were locally-engaged handymen and labourers.

The principal activities of the Department during the period under review were concerned with general repair and maintenance work and the reconstruction of the roads in Stanley. About 16,000 cubic yards of peat were also cut each year, all of it by hand.

Chapter 11: Communications

SHIPPING

The Falkland Islands Company's R.M.S. Darwin, a modern vessel of 739 registered tons and capable of carrying 40 passengers, replaced the Fitzroy in August, 1957. She averages 12 round trips to Montevideo annually, carrying mail, freight and passengers. In addition to being the main link with Montevideo the vessel makes various calls at settlements in the Colony. Vessels are also chartered by the Falkland Islands Company to bring supplies from the United Kingdom and to take back the wool clip.

The R.R.S. John Biscoe and the R.R.S. Shackleton provided occasional communication between Stanley, South Georgia and the Dependencies, and South America.

H.M.S. *Protector* was based on Stanley from November to March in 1957-58 and 1958-59.

The following table shows the number of vessels which entered and cleared Stanley in the two years:

		1958	1959
Number of ships entering	•	24	21
Number of ships clearing	•	20	21
Net tonnage in		29,621	17,129
Net tonnage out	. =	27,545	17,129
Passengers in	•	274	257
Passengers out	•	314	335

RAILWAYS

There are no railways in the Colony.

ROADS AND VEHICLES

There are 12 miles of road in and around Stanley, they are mainly of water-bound macadam construction and were formerly in a very poor state of repair, but reconstruction work has begun. The main road along the sea front, on which are situated most of the principal buildings, is constructed of concrete; it was the first part of the new road reconstruction programme, having been completed in 1957. It is intended to reconstruct the remaining roads in tarmacadam; so far two miles have been completed.

Rough unsurfaced tracks connect some settlements on the East and West Islands and summer travel is possible by means of Land Rover or motor-cycles, depending on weather conditions.

The following table shows the number of vehicles registered in 1958-59:

			<i>Impo</i>	rted	Regis	tered
			1958	1959	1958	1959
Lorries .			1		63	63
Vans .		•			18	18
Cars .			10	4	71	75
Motor cycles		•	40	37	165	202
Power scooter	S	•			8	8
Land Rovers			8	6	47	53
Tractors			13	2	75	77
Jeeps .		•	8	49	15	64
			80	98	462	560

LAKE AND RIVER TRANSPORT

There are no navigable rivers in the Colony and no lakes.

AIR SERVICE

The Falkland Islands Government Air Service was started in 1948, using one single-engined Auster land-plane. The service now operates two single-engined De Havilland Beaver sea-planes. The original medical and mail service has now been extended to include passengers and freight. The service is internal only.

During 1958, 1,560 passengers were flown; in 1959 the number of passengers increased to 1998. During 1959, 5,683 lb. of freight was also flown.

Invaluable work was done in flying urgent medical cases to Stanley for treatment. Full use of the aircraft was made by the Medical Department during the second half of 1959 to transport the eyespecialist to the various outlying settlements, and to convey around the Camp those doctors who were engaged on giving inoculations against poliomyelitis.

There is no international air service connecting the Colony with the outside world.

POSTS AND TELEGRAPHS

A telephone system is maintained in Stanley by Government for general as well as official use. There were 395 telephone subscribers in 1958 and 411 in 1959.

A new exchange building was erected in 1957 and a new telephone exchange switchboard with a larger capacity was installed.

Most of the sheep-stations on the East Falkland have their own lines connected to the Stanley system; on the West Falkland the telephones converge on Fox Bay where there is a Government wireless station for inter-island traffic.

Some of the farms have private radio transmitters for local use, but these have been largely superseded by radio-telephone sets provided and installed by Government.

The Posts and Telegraphs Department handles approximately 16 mails annually from overseas, each averaging 180 bags. An average of 40 inter-island mails also passes through the Post Office. Inter-island airmail between Stanley and the settlement is carried when weather conditions permit.

Telegrams for inland and overseas are accepted at the Post Office and the number of telegrams handled in 1958 exceeded 57,000.

A commercial wireless telegraphy station operates daily from 9 a.m. until 11 p.m. and employs six operators and three apprentices.

Two electricians and one apprentice are employed on servicing the telephone and broadcasting services.

Chapter 12: Press, Broadcasting and Films

PRESS

THE only periodical printed in the Colony, other than the official Gazette, is the Falkland Islands Monthly Review, which is published on the first Friday of each month. A weekly newsletter is broadcast to Stanley, the Camp and the Dependencies.

BROADCASTING

The Falkland Islands established the first colonial broadcasting service. In the early part of 1929 a wired broadcasting system was started in Stanley; the service covered not only the town but also many parts of the East Falkland, the programme being carried to outlying farms by the normal telephone lines. Although a number of earlier experiments were made, wireless broadcasting from a radio transmitter did not become a regular feature until 1942. The two methods, operated jointly, are now a well-established service in the Islands.

The broadcasting service is controlled by a voluntary committee under a director. A salaried secretary is employed.

Programmes of two or three hours' duration are broadcast daily,

and four part-time announcers are employed. B.B.C. news bulletins,

sports results and "Radio Newsreel" are broadcast regularly, and extensive use is made of the B.B.C. Transcription Service. The acquisition of a tape recording machine in 1953 has facilitated the production of local features.

There were 471 wireless receiving licences issued in 1958 and 521 in 1959. Three hundred and twenty-five wired broadcasting subscriptions were paid in 1958 and 319 in 1959.

FILMS

A film library organised by the Superintendent of Education was established in 1953; it has grown considerably and its membership has increased. By the end of 1959 the library was supplying films to seven stations on the East Falkland and nine stations on the West Falkland. Prints are obtained from J. Arthur Rank Overseas Film Distributors Ltd., and from the Central Office of Information, London. The library operates on a non-profit basis. Films of educational value are shown at the Senior School, Stanley. A local business man operates a cinema in the Town Hall, Stanley, where films are shown once weekly.

INFORMATION SERVICES

No information service is operated by Government. Important announcements are broadcast over the local radio station.

Chapter 13: Local Forces

THE Falkland Islands Volunteer Corps was first formed in 1892. The Force stood down in 1919 and was reconstituted in 1920 as the Falkland Islands Defence Force. Service in the Force is voluntary.

Annual compulsory training consists of twelve instructional parades each of two hours' duration, musketry classification, the ceremonial parade on the occasion of the birthday of Her Majesty the Queen, and a maximum of four ceremonial parades as may be ordered by the Commanding Officer. In addition to the foregoing, twenty parades, each of one hour's duration, are compulsory for first-year recruits.

The full-bore rifle competition for the Falkland Islands Force 122 Trophy is held annually for members on the active list of the Force. The Stanley Cup Competition, which is also an annual event, is open to members on the active, reserve, and retired lists of the Force.

Small-bore rifle shooting takes place on two evenings a week in the Drill Hall throughout the winter months. The Miniature Rifle Club is open to members on the active, reserve, and retired lists of the Force, and to ladies who have attained the age of sixteen years. Shooting is also arranged on Sunday afternoons for members of the Boys' Brigade between the ages of 12 and 18 years. Badminton is played on Tuesdays and Saturdays during the winter.

During the summer months the Drill Hall is made available to the catering branch of H.M. ships and to the local branch of the Red Cross Society for the purposes of supplying suppers and teas for naval personnel when ashore, as there are no restaurants in

Stanley.

The total expenditure on defence was £944 in 1957-58 and £969 in 1958-59.

Chapter 14: General

THE D.S.I.R. IONOSPHERIC OBSERVATORY

THE ionospheric observatory, which was established in Stanley in 1947, is maintained and staffed by the Radio Research Organisation of the Department of Scientific and Industrial Research.

The observatory provides data which, when combined with that from other similar stations located throughout the world, is used to predict optimum conditions for radio communication. The predictions are issued three months in advance and are of use to all controllers of communication circuits, enabling the best and most economic use to be made of the available facilities, especially the overcrowded frequency spectrum. The data is also used for long-term research into the behaviour of the ionosphere.

Measurements are made, by automatically operated transmitters, of the properties of the ionospheric reflecting layers directly overhead. Height and frequency characteristics are obtained hourly, whilst the absorption is measured daily at noon, when it is highest. These records are produced on film which is analysed at the station and the analysis is sent monthly to a World Data Centre at the Radio Research Station at Slough, England. The magnetic field of the earth has a considerable effect on ionospheric conditions and a continuous record is kept of local variations.

Radio noise from electrical storms in the atmosphere is often a limiting factor in communication and the station is equipped to enable the local level of such noise to be measured. Since this noise

General 41

originates in the lightning of the storms, a counter, recording lightning flashes within a pre-determined area, is also in use.

During the recently concluded International Geophysical Year the programme of the station was greatly increased and fitted into an extensive world-wide series of measurements. Ionospheric soundings were often required at quarter-hour intervals and absorption was measured hourly. The measurement of atmospheric noise was arranged to cover twenty-four hours. The staff of the station was increased to cover the extra work.

The observatory has a close liaison with the Falkland Islands Dependencies Survey. Regular contact is maintained with the base at Port Lockroy, where similar work has been in progress since 1952, and that station's results are thereby included in the prediction service. Since Port Lockroy is a high latitude station, this is especially valuable. It is hoped to extend this co-operation to the base at Halley Bay.

A seismograph which was originally installed for the I.G.Y., and which is operated and maintained on behalf of the Survey, has been retained in service and is producing a continuous record of seismo-

logical disturbances.

PART III

Chapter 1: Geography

THE Falkland Islands lie in the South Atlantic Ocean, between latitudes 51° and 53° South and longitudes 57° and 62° West, on the edge of the Patagonian Continental Shelf.

The group, consisting of two large islands and about 200 smaller islands, with a total land area of approximately 4,600 square miles, is situated about 400 miles north-east of Cape Horn and about the same distance from the eastern entrance to the Straits of Magellan. Montevideo, in Uruguay, which is the normal port of entry for the Falkland Islands, lies 1,010 miles to the north of the capital, Stanley.

The Colony is poorly mapped, for existing maps are still largely based upon the hydrographic surveys made between 1838 and 1845. Complete aerial photographic cover is now available and topographical maps will be published shortly.

GEOLOGY AND LANDFORMS

The Falkland Islands are composed almost entirely of palaeozoic and mesozoic sedimentary rocks. Some of these have strong lithological and palaeontological affinities with those of South Africa, Uruguay and Southern Brazil. Although the islands lie on the edge of the Patagonian Continental Shelf, there is no stratigraphical connection between the Falklands and the nearer parts of the South American mainland. The extensive tertiary deposits of eastern Patagonia are not represented in the Falkland Islands, nor is the great oil-bearing cretaceous geosyncline of eastern Tierra del Fuego. The axis of Andean folding is supposed to lie to the south of the islands, through Burdwood Bank, whence it is continued as the Scotia Arc to South Georgia and Graham Land.

The distribution of rocks within the Falkland Islands is now fairly well known and geological mapping is as satisfactory as the present state of topographical mapping will permit. West Falkland and the adjacent islands are predominantly composed of palaeozoic sedimentary rocks, quartzites, sandstones and shales, with a few minor occurrences of tillite and a small exposure of the archaean basement complex at Cape Meredith in the extreme south.





The northern part of East Falkland, is composed, too, of the palaeozoic sedimentary rocks, with the main development of younger strata in Lafonia and the surrounding islands. These mesozoic rocks are represented by sandstones and mudstones of terrestrial origin, which may be equated with the Gondwana succession of other parts of the Southern Hemisphere.

The main structural elements in the islands are folds which occurred after the deposition of the youngest mesozoic rocks. Two main fold directions may be recognised. The first trends east-west across the northern part of the islands; the second is roughly parallel to the direction of Falkland Sound and is exposed along the western side of it. It is now believed that folding along both axes was contemporaneous and may, indeed, form a single system.

The close relationship between the rock succession and fossil fauna of the Falkland Islands and parts of southern Africa has been frequently quoted as evidence to substantiate the hypothesis of continental drift. Recent research into the structures of the Falkland Islands suggests that this group may have moved from the vicinity of south-east Africa and that the rocks of the Falklands represent the missing portion of the truncated Karroo basin of Natal and eastern Cape Province.

During the quarternary era, when adjacent parts of the South American mainland were glaciated, the Falkland Islands were ice-free. There is no evidence of any permanent glaciation within the group and it is supposed that, even at the glacial maxima, the climate was periglacial. During this period, large accumulations of quartzite boulders—stone runs, as they are called—formed in the valley floors of upland areas. The origin of the stone runs has been attributed to solifluction—soil creep down the valley sides, assisted by frost-and-thaw action—but this explanation is not wholly convincing.

Two main morphological elements may be recognised, the mountains which occur in the areas of folded Devono-Carboniferous sandstone and quartzite, and the great plain of Lafonia, where the mesozoic rocks are exposed. The principal mountain ranges follow the trend of the folded quartzites, from east to west across both main islands and parallel with Falkland Sound on West Falkland. The hills occasionally rise to about 2,300 feet (Mount Adam, on West Falkland, is probably just over 2,300 feet; Mount Usborne, on East Falkland, is about 50 feet lower), but the general summit levels are between 1,500 and 2,000 feet. On East Falkland, the main upland ridge of Wickham Heights, rises steeply along the southern edge of the folded quartzites. The tillites and mesozoic sedimentary

rocks which lie to the south have been considerably less resistant to erosion so that, where these have been folded, the terrain consists of low parallel ridges rising to little more than 200 feet. South of the great inlets of Choiseul Sound and Brenton Loch, where the rocks are virtually undisturbed, the whole country is a flat plain which seldom rises more than 100 feet above sea-level.

Generally speaking, the rivers are small. The valleys show close adjustment to structure. The many intricate inlets round the coast, many of which form magnificent harbours, were originally formed by river action when the sea-level was at least 150 feet lower than at present. The subsequent submergence, which formed the characteristic ria inlets, appears to have been the dominant movement which has controlled the later development of the coast.

The islands have no mineral wealth because none of the sedimentary rocks contains minerals which are of economic value. The only local fuel is low-grade peat. The impermeable nature of the quartzites and sandstones has greatly hampered drainage and most of the rocks lack important minerals for plant growth. Limestone is absent and soils are acid in reaction. Successive surveys of the islands for economic minerals have shown that only the beach and dune sand could conceivably have any value, but in islands as remote as the Falklands, their exploitation for glass-making cannot be regarded as an economic venture.

CLIMATE AND VEGETATION

The Falkland Islands lie on the northern edge of the depression belt through Drake Passage; they are thus dominated by westerly winds and by the continuous variation of weather caused by the procession of air masses and fronts across them. The islands lie in the lee of the South American continent, but are separated from the mainland by about 300 miles of relatively cold sea. Although the warming and dessicating influences of the Andes are still felt in the islands, their effect upon the climate is considerably modified by this sea passage. The climate of the Falkland Islands is characterised by the low temperature range, high winds, seasonal uniformity and day-to-day variability of weather which are commonly associated with an oceanic situation in temperate latitudes.

The majority of reliable and long-term climatic records which are available for the Falkland Islands depend upon observations which have been made in the vicinity of Stanley. Consequently we have little precise knowledge as to how temperature and rainfall vary through the archipelago as a whole. It is commonly supposed that the south and west of the islands are warmer and drier than

the north-eastern corner, although this cannot be supported by instrumental evidence. At Stanley, the mean monthly temperature varies between 49.0° F. in January and 35.5° F. in July. The air temperature has never been known to exceed 77° F. or to fall below 12° F. No month is entirely frost-free, although the air temperature rarely falls below 32° F. in January or February. Average values for relative humidity are high. In consequence, the incidence of cloud is high with a large proportion of overcast days. The low sunshine records reflect this cloudiness, for only about 35 per cent. of the total possible sunshine is recorded annually. The rainfall at Stanley is about 27 inches, spread fairly evenly throughout the year, with a slight maximum in summer (December and January) and a minimum in early spring (September and October). The number of days with rain is high throughout the year (16-21 days per month). Snow falls on about 50 days during the year and has been recorded in every month except January and February. Snowfalls are, however, light and soon melt. The wettest year on record was 1911, when 37 inches of rain were measured. The driest year was 1946, with only 18.4 inches.

The prevailing winds are westerly. More than two-thirds of the winds blow from the quadrant between south-west and north-west. There is little seasonal variation in wind direction. The average wind speed is about 17 m.p.h. with very little diurnal or seasonal variation. Calm conditions are rare. There are generally about two days with gale during each month, but on many other days the wind strength is only a little below gale force. The persistence and strength of the wind are, without doubt, the most marked and disagreeable features of the climate.

The cool, windy climate has prevented natural tree-growth. The natural climax vegetation of the Falkland Islands is a grassland with certain species of heath and dwarf shrubs, which form plant communities similar to the moorland vegetation of upland Britain. The monotonous succession of arenaceous and argillaceous sedimentary rocks, with the absence of limestone, is reflected in the uniformity of the sub-soil type. The top-soil is generally peaty, though the thickness of the peat horizon may vary from less than one inch to more than fifteen feet. Much of the uplands are bare of vegetation, comprising eroded peat, scree and stone runs.

The grasslands of the Falkland Islands represent the sole natural resource which has proved capable of economic exploitation throughout the entire history of colonisation. Following the first settlement by the French in 1764, cattle ran wild on East Falkland. By 1840, the number of wild cattle had reached some figure

between 50,000 and 100,000 and appeared to be increasing rapidly despite the large numbers killed annually. During the early years of the Colony, the sale of beef to visiting ships represented the principal economic activity. Within ten years, however, sheep began to replace the wild cattle which were systematically slaughtered until, by 1880, they had been virtually exterminated. During the last thirty years of the nineteenth century, sheep-farming developed rapidly. Between 1893 and 1899, there were more than 750,000 sheep in the islands. This appears to have been a greater number than the pastures could support by the methods of large-scale ranching which have always been employed. After 1898, the number of sheep began to fall and this decline has persisted until the present day. This trend has been attributed to many factors, but certainly one of the most potent has been the deterioration of the richer grazing areas by continuous overstocking in the past at all seasons.

Little precise information was available until 1938-39, when the islands were first examined by a competent ecologist, but the results of this work showed that the major subdivisions of the grasslands are composed of comparatively few species which have any significant nutritional value. Pasture improvement experiments are at present being carried out by the Falkland Islands Company in Lafonia and by Bertrand and Felton Limited at Roy Cove, West Falkland.

POPULATION, LAND TENURE AND ECONOMY

The population is almost entirely of British origin, with a very small admixture of Scandinavian and Latin American blood. The first settlers, some of whose descendants still live in the Colony, began to arrive during the uneasy years which followed the establishment of the Colony in 1833 (see page 51). During the remainder of the nineteenth century the population increased until it had reached about 2,000 in 1900. During the whole of the twentieth century, the population has fluctuated between 2,000 and 2,300. This unique condition of an almost static population may be accounted for by the fact that owing to the limited economic opportunities, emigration from the islands has practically balanced the natural increases throughout the period.

During the early development of the Colony, great emphasis was laid upon its strategic position, both as a naval base and as a port of call for ships rounding Cape Horn. In consequence, the development of the land was largely neglected and no proper system of land tenure was ever devised. The Falkland Islands are unique among the Colonies in that the freehold title to all the land, save a few thousand acres, was sold without any proper survey.

The land on East Falkland was taken up first and most of it was sold by 1860. Colonisation of West Falkland began in 1867 and, within two years, virtually the whole of the land had been sold. The land thus acquired was converted into large sheep farms. The modern tendency has been for the number of separate estates to diminish as the larger firms increase their individual holdings. Today, the Falkland Islands Company owns rather more than half the entire area of the Colony. Extensive ranching of sheep for wool represents in fact the sole economy of the islands.

From time to time, attempts have been made to exploit other natural resources or to diversify the ranching economy but all these have ultimately failed. During the late nineteenth century, Stanley was an important revictualling port with a primitive ship-repairing industry. These activities began to dwindle after steamships started to replace sailing ships and finally died when the opening of the Panama Canal diverted shipping from the Cape Horn route. Sealing had been carried out sporadically since the earliest days of settlement in the islands, but since the wholesale destruction of the valuable Southern Fur Seal, in the early years of the nineteenth century, the other oil-producing species of seal have had less economic importance. The last attempt at commercial sealing was carried out just after the second World War with financial assistance from the Colonial Development Corporation but only survived for three seasons. An effort was made to establish a meat freezing plant at Ajax Bay, East Falkland, but this project, also assisted by funds from the Colonial Development Corporation, was discontinued in 1955 and the plant was put up for sale. Whaling was carried out for a few years before the first World War, when a shore factory was built on New Island, West Falklands. This was always subsidiary to the greater activity at South Georgia, whither the company moved in 1916.

SETTLEMENT AND COMMUNICATIONS

The capital of the Colony is Stanley and more than half the total population live there. The only other settlement of any size is Goose Green in Lafonia, with a population of about 100. The other settlements are isolated sheep stations. The site of Stanley was originally selected because it has special advantages of accessibility and protection for sailing vessels. Today, its peripheral situation, near the extreme north-east corner of the islands, is a distinct disadvantage because many farms are remote from this site. The outlying settlements lie close to navigable water to facilitate the shipment of wool.

There are motor roads in Stanley and rough tracks negotiable by Land Rover-type vehicles connect some of the sheep stations.

A growing number of jeeps and motor cycles has recently become a feature of Camp life. The bulk of heavy supplies is transported by sea; light goods, people and mail are carried by air. The introduction of an air service in 1949 has done much to reduce the extreme isolation of many of the outlying farms.

Communications with the rest of the world are largely confined to the monthly journeys made by one small vessel belonging to the Falkland Islands Company. Voyages are made to Montevideo, in Uruguay, every month and about once a year to Punta Arenas,

in Chile.

Chapter 2: History

The honour of first sighting the Falklands is thought to belong to Captain John Davis, who observed the group from his ship *Desire* in 1592. He sailed from Plymouth in an expedition commanded by Admiral Cavendish with the Philippines and the coast of China, via Cape Horn, as their destination.

John Jane, the historian of the voyage, described the discovery

of the islands as follows:

"The ninth (August 1592) wee had a sore storme, so that wee were constrained to hull, for our sailes were not to indure any force. The 14 wee were driven in among certaine isles never before discovered by any knowen relation, lying fiftie leagues or better from the shore East and Northerly from the Streights; in which place unlesse it had pleased God of his wonderful mercie to have ceased the winde, wee must of necessite have perished. But the winde shifting to the East wee directed our course for the Streights, and the 18th August wee fell with the Cape (Virgin) in a very thick fogge; and the same night wee ankered ten leagues within the Cape."

These isles were the Falkland Islands.

Two years later Sir Richard Hawkins reports having seen them, and called them "Hawkins's Maidenland." after Queen Elizabeth, and a Dutchman, Sebald Van Weerdt, appears to have visited some of the outlying islands, thought to be the Jasons, on the north-west coast in 1598. They were long named the Sebaldine Islands and are so shown on a map hanging in the Secretariat at Stanley, bearing a date "about 1790."

The Falklands were so named by Captain Strong after Viscount Falkland, Treasurer of the Navy, in 1690. He sailed in the Welfare between the West and East Falklands and called the passage Falkland Sound. But it does not appear that his name was applied to the group as a whole before 1745.

To historians the islands are known also as "Les Malouines" after Viscount de Bougainville, who sailed from the Brittany port of St. Malo; the Spanish variant of "Las Islas Malvinas" is used on the mainland of South America.

The recorded history of the islands begins in 1764 when a settlement was established by de Bougainville. Setting sail from St. Malo on 15th September, 1763, he called at Montevideo—as is still the custom—where he took on board everything that was necessary to establish a settlement, including cows, calves, goats, sheep, pigs and horses. The Falklands were reached on 31st January, 1764. Finding no good anchorage at what is known as West Falkland, the expedition sailed round to East Falkland and entered Berkeley Sound. The site for the new settlement was selected on 17th March and a fort, St. Louis, was erected, together with several huts. On 5th April formal possession in the name of King Louis XV was taken of all the islands under the name of "Les Malouines." Traces of this colony may still be seen at the western extremity of Berkeley Sound.

In the light of history it seems a strange coincidence that the Admiralty should have despatched to the Falklands about the same time a Captain John Byron ("Foul-weather Jack") with orders to seek some suitable place to use as a base. He had his landfall at Saunders Island and, taking possession of this and all the neighbouring islands in the name of King George III, named the settlement and harbour "Port Egmont" after the Earl of Egmont, then the First Lord of the Admiralty.

On his departure he left Captain MacBride in charge and the latter, while circumnavigating the islands, was surprised to discover the French settlement at Port Louis less than 100 miles from his own base. He warned the French to remove themselves from the territory belonging to the English Crown and himself went to England to report his discovery. The Government thereupon decided to establish a settlement at Port Egmont and during 1766 both countries maintained settlements in the islands. For the next two years much bad feeling was engendered among the three great Powers of the period, France, Spain and England. Spain had for long regarded the South Atlantic as her own particular sphere of interest and was determined to resist any attempts by either France or Britain to appropriate the islands. After long and very angry correspondence, the French King consented to withdraw his subjects and this was duly done in 1767 on payment of a sum said to have amounted to £24,000. The Spaniards, having taken possession, changed the name of the settlement to Soledad, and left a garrison there under authority of the Imperial Governor at Buenos Aires.

Of this episode, de Bougainville wrote:

"I delivered our settlement to the Spaniards who took possession of it by planting the Spanish colours which were saluted at sunrising and sunset, from the shore and from ships. I read King Louis' letter to the French inhabitants of this infant colony by which His Majesty permits their remaining under the Government of His Most Catholic Majesty. Some families profited of this permission: the rest, with the garrison, embarked on board the Spanish frigates."

Endeavours to induce the British to withdraw were more protracted and eventually orders were sent for their expulsion by force. On the 4th June, 1770, a Spanish frigate entered Port Egmont and two days later four more Spanish ships anchored opposite the settlement. The one British vessel was a sloop-of-war, the Favourite, and the only fortifications a block-house and a mud battery mounting four-pounders. The British Captain, playing for time, wrote to the Spanish commodore, requesting him to depart as soon as he had obtained "necessary refreshments." In a brief reply the Spaniard stated that he had come with a very large force, comprising 1,400 men, besides the crews of his vessels, and an ample supply of ammunition and artillery, and his orders were to expel the British occupants. The latter then had no other course but to capitulate, the Spanish troops coming ashore on the 10th June, 1770. The British settlers were embarked on board the Favourite and sailed on the 14th June, reaching England on the 24th September.

The Spanish action brought the two countries to the verge of war, but on 16th September, 1771, after protracted negotiations, Port Egmont was restored to Britain. However, the settlement was short-lived, for the islands were abandoned by the British in 1774; before they left a plaque was erected on a block-house with the following inscription:

"BE IT KNOWN TO ALL NATIONS That Falkland Islands with this Fort, the Stonehouse, Wharfs and Harbours, Bays and Creeks thereunto belonging are of the Sole Right and Property of His Most Sacred Majesty, George the Third, King of Great Britain, France and Ireland, Defender of the Faith, etc. In witness whereof this plate is set up, and His Britannic Majesty's colours left flying as a mark of possession

by S. W. Clayton

Commanding Officer at Falkland Islands

A.D. 1774 "

History 51

While Port Egmont remained deserted, the Spaniards maintained their settlement of Soledad until they too withdrew in the first quarter of the nineteenth century; the exact date is still uncertain. Apart from the sealing and other vessels which frequently took refuge in the natural harbours the Falklands were without permanent occupants for a number of years.

Argentine interests in the Falklands began in 1820 with the endeavours of Louis Vernet to revive the settlement at Port Louis (or Soledad). Vernet, by origin a German from Hamburg who had long resided in America, had moved to Buenos Aires. Under the authority of the Republic of Buenos Aires he finally took possession of Soledad in August, 1829. British protests followed this action, although the situation remained quiet until 1831. Vernet then seized three United States vessels, a rash action which eventually led to the American warship *Lexington* destroying the small fort at Soledad and retaking the vessels which had been seized.

Argentine claims to the islands persisted, but the British Government reasserted its sovereignty in 1832 by sending out His Majesty's ship Clio under command of Captain Onslow. On reaching Port Louis he found 25 Argentine soldiers, and a schooner flying the Argentine colours. The Argentine commander was acquainted with the object of the mission and given orders to quit; while consenting to embark his soldiers he kept the Argentine flag flying, whereupon Captain Onslow landed, hoisted the British flag, and sent an officer to haul down the foreign flag, which was delivered on board the Argentine ship. On leaving Port Louis in 1833 Captain Onslow entrusted William Dickson (Vernet's storekeeper) with the care of the settlement, leaving him with instructions that the British flag be hoisted when any vessels anchored and on all holidays.

The year of establishment of the Colony is marked with a savage crime, which will cause less surprise if the wild nature of the settlers remaining at Port Louis is called to mind—sealers and whalers of various nationalities, Indians, convicts and gauchos from South America and adventurers generally disposed to resent the mere existence of authority. On 26th August, 1833, without warning, and, as far as is known, for no tangible cause, Mathew Brisbane (Vernet's agent) and William Dickson were brutally done to death by three gauchos and six Indians, assisted by some deserters from vessels who supplied the firearms. Brisbane lies buried in the cemetery there, and his grave, put in order by Governor Allardyce many years after, and restored again by Sir James O'Grady in 1933, is now cared for and honoured.

When the news of the crime became known Lieutenant Henry Smith, R.N., was sent to the Colony as Governor and was succeeded as such by other naval officers until a civil administration was formed under Lieutenant R. C. Moody, R.E., in 1841. Governor Moody laid out a township which he named Anson and then removed in 1844 to Stanley, the present capital.

After difficult times at the beginning further settlers and fresh capital were gradually attracted by the possibilities of the new Colony, and in 1846 that part of the East Falkland Islands lying south of the isthmus at Darwin was conceded by sale to Samuel Lafone of Montevideo. Lafone, however, did not long continue to farm the property on his own account and in 1851 transferred it to the Falkland Islands Company, which was incorporated by charter that same year. The Falkland Islands Company, besides owning Lafonia, has extensive tracts of land in the northern half of the East Falkland Island and also on the West Falkland Island, and carries on business as shipping agents and general merchants in Stanley.

In 1849 the small garrison composed of sappers, which had been maintained in the Colony, was replaced in turn by a garrison of Marines, 25 in number and all married. About this time the South American Missionary Society founded a training settlement for Indians from Tierra del Fuego on Keppel Island. The settlement did not succeed and the experiment had to be abandoned. Bishop Stirling, who was consecrated the first Bishop of the Falkland Islands in 1869, came out to Keppel Island as superintendent of the settlement in 1862.

In February, 1871, the Duke of Edinburgh visited the islands and in January, 1881, Prince (later King) George entered Port William, together with his brother Prince Albert Victor, on board H.M.S. *Bacchante*, but was prevented from landing by receipt of sudden orders to proceed to the Cape of Good Hope.

The early industry of the Colony was exploitation, mainly for their hides, of wild cattle running freely over the East Falkland Island. These wild cattle were descendants of the cattle introduced by de Bougainville and of later importations during the Spanish occupation; they were considered the property of the Crown and their slaughter was subject to licences issued by the Governor. Sheep farming was attempted first by the brothers Whittington on East Falkland, where, by the year 1860, a considerable number of sheep were being run, and shortly afterwards a start was made on the West Falkland. Between 1870 and 1880 a definite change-over

History 53

from cattle to sheep took place, and subsequently the wild cattle were killed off by degrees and have now become almost extinct.

The Colony enjoyed a steady prosperity from the proceeds of its wool, but few landmarks of positive progress stand out, other than that in 1885 the Colony became entirely self-supporting and that in 1912 a wireless station was opened. Indeed, the Falkland Islands were little remembered until 8th December, 1914, when they sprang into fame as the scene of Sturdee's brilliant victory over Graf von Spee. Not long before they had bidden farewell to Craddock on the eve of Coronel. The 8th December has been adopted as a national day and is annually celebrated by religious services and by a public holiday. A memorial commemorating this victory was unveiled on 26th February, 1927.

When war was declared in 1939 the Falkland Islands Defence Force was embodied in order to man the previously chosen outposts and gunsites, and training of the infantry company was greatly intensified. At the same time the Colony's value as a naval base became obvious as a result of the activity in the South Atlantic. One notable local event was the return of the British cruisers after the battle of the River Plate to land the wounded, who were cared for in the local hospital for several weeks. At the beginning of 1940 there were at one time as many as six cruisers in Stanley harbour and its approaches, but after the disappearance of the German raiders, naval activity diminished greatly. The area to the south of the River Plate was devoid of shipping and, perhaps, too remote for submarine warfare.

In 1942, following the outbreak of war with Japan, a garrison of Imperial troops arrived. It comprised the 11th Battalion, the West Yorkshire (the Prince of Wales' Own) Regiment, the 259th A.A. Battery, R.A., and parties of the Auxiliary Corps, in all some 2,000 officers and men. The sending of such a force was an indication of the strategic importance of the Colony. The man-power shortage continued because batteries and outposts manned by the local force had to be kept at full strength.

Until a permanent camp of Nissen hutting was constructed, the 2,000 troops were billeted in the town, and the householders of Stanley, despite all inconveniences, including the evacuation of schoolchildren to the Camp, displayed the hospitality which is a characteristic of the Falkland Islands. The Force left at the beginning of 1944 and was greatly missed; it was succeeded by a much smaller body, about 200 men, which was responsible for the maintenance and eventually the dismantling of the camp, and was withdrawn in 1945.

Unemployment in the Colony disappeared with the calling up of men for the Falkland Islands Defence Force and this mobilisation embarrassed civil affairs in the early days. Military and civil manpower needs were a matter for frequent adjustment throughout the war, and although neither was perhaps fully satisfied, a state of fair equilibrium was reached, at least as regards essential activities. The drift of men into Stanley, which had been going on for some years, was aggravated in the early days of the war and has had a marked and permanent effect in a labour shortage on the farms.

Stanley Town Hall was accidently burned to the ground in 1944. Its fine public hall played a very important part in social life, so that the loss of it was a blow to the whole community. The building contained also the Public Library, the Museum, and certain Government offices. A new Town Hall was opened in 1950.

During the war the Colony and Dependencies made gifts of over £70,000 to the United Kingdom as a war contribution, including some £20,000 for war charities. Ten Spitfires were purchased with £50,000 of this total, which was voted by the Legislative Council in 1940, and these aircraft flew into action bearing the name "Falkland Islands." Despite limited manpower, over 150 of the Colony's young men and women served in the Armed Forces, Merchant Navy, Nursing Services and the Land Army in the United Kingdom. After the war some of them elected to stay there.

The roads in Stanley deteriorated on account of heavy military traffic, for which they were not designed. Work on their reconstruction is well advanced.

In January, 1957, after an interval of some seventy years, the Falkland Islands were again visited by a member of the Royal Family, when His Royal Highness the Duke of Edinburgh spent three days in the Colony.

Chapter 3: Administration

At the head of Government is the Governor and Commander-in-Chief, who is advised by an Executive Council composed of three ex officio and either four or five unofficial members. The three ex officio members are the Colonial Secretary, the Senior Medical Officer, and the Colonial Treasurer.

The constitution of the Legislative Council was changed in 1951, giving for the first time a majority to the unofficial members. With the Governor as President, the Legislative Council is composed of

three ex officio members (the Colonial Secretary, the Senior Medical Officer, and the Colonial Treasurer), two nominated official members, four elected members and two nominated unofficial members.

Local government is confined to Stanley, where there is a Town Council consisting of six elected members and three members nominated by the Governor. Members of the Town Council elect one of their members annually as Chairman. Town Council elections are held biennially.

Chapter 4: Weights and Measures

IMPERIAL weights and measures are in general use.

Chapter 5: Reading List

- ALLARDYCE, Sir W. L. A Short History of the Falkland Islands. Letchworth, Garden City Press, 1909.
- BAKER, H. A. Final Report on Geological Investigations in the Falkland Islands, 1920-2. Stanley, C.S.O., 1924.
- BOYSON, V. F. The Falkland Islands. Oxford Clarendon Press, 1924.
- BROOKS, C. E. P. The Climate and Weather of the Falkland Islands. Stanley, C.S.O., 1923.
- COBB, A. F. Wild Life in the Falkland Islands. London, Gowans, 1910.
- COBB, A. F. Birds of the Falkland Islands. London, Witherby, 1933.
- DAVIES, W. The Grasslands of the Falkland Islands. Stanley, C.S.O., 1939.
- ELLIS, J. M. The Falkland Islands: A short notice prepared on the occasion of the Centenary of the Colony. Stanley, C.S.O., 1933.
- Evans, H. R. Plants which have flowered successfully in Gardens of the Falkland Islands. Stanley, C.S.O., 1944.
- FARRERE, C., and CHACK, L. P. La bataille des Falklands. Oxford University Press, 1928.
- GEOBEL, JULIUS, JR. The Struggle for the Falkland Islands. New Haven, Yale University Press and London, Oxford University Press, 1927.
- GRANT, B. S. H. The Postage Stamps of the Falkland Islands and Dependencies. London, Stanley Gibbons Ltd., 1952.

- GROUSSAC, PAUL. Les Illes Malouines. Beunos Aires, 1910.
- McKinnon, L. B. Some Account of the Falkland Islands. London, 1840.
- McWhan, W. F. The Falkland Islands To-day. Scotland, Stirling Tract Enterprise, 1952.
- MIDDLETON, Sir J. Memorandum on Sheep Farming Industry in the Falkland Islands. Stanley, C.S.O., 1924.
- Munro, Hugh. Report of an Investigation into the Conditions and Practice of Sheep Farming in the Falkland Islands. Stanley, C.S.O., 1924.
- Penrose, Bernard. An Account of the Last Expedition to Port Egmont in 1772. London, 1775.
- SKOTTSBERG, C. A Botanical Survey of the Falkland Islands. Uppsala, 1913.
- VALLENTIN, E. F. Illustrations of the Flowering Plants and Ferns of the Falkland Islands. London, Reeve, 1921.
- WHITTINGTON, G. T. The Falkland Islands. London, 1840.

The Dependencies

PART I

General Review of 1958 and 1959

THE first crossing of the Antarctic was achieved by the Trans-Antarctic Expedition under the leadership of Dr. (now Sir Vivian) Fuchs, now Director of the Falkland Islands Dependencies Survey (F.I.D.S.). His main base, Shackleton, was established in the Dependencies area near to Vahsel Bay and his traverse as far as the South Pole lay within and reached the apex of the British sector of Antarctica.

The overall level of activities of the Falkland Islands Dependencies Survey was stepped up at the beginning of the International Geophysical Year on 1st July, 1957. Since then the scientific programme has been gradually and steadily reinforced.

Particular attention was paid to the opportunities provided by the Survey's two vessels R.R.S. Shackleton and R.R.S. John Biscoe to land summer field parties at locations inaccessible from established bases. Successful operations were carried out in both the summers which this report covers.

H.M.S. *Protector* gave much assistance especially during the summer of 1958-59 when field parties were landed by her helicopters in the South Shetlands to carry out a survey link between the mainland and the islands themselves by means of tellurometers.

The Survey was forced to close two bases south of 65° S. at the beginning of 1959; fast sea ice prevented the bases being relieved by sea, even with the help of the United States ice-breakers *Edisto* and *Northwind*.

Two other bases were closed because their scientific work had been completed.

The biggest setback of the period under review was the failure to establish a large field base on Stonington Island from which it was planned to operate aircraft in 1960. This was due to abnormally severe ice conditions.

PART II

Chapter 1: Population

THE population of South Georgia comprises the workers at the whaling stations and a few Government officers at King Edward Point (Grytviken) in Cumberland East Bay. The total population in 1959 was 1,272. Two deaths were registered in 1958 and two in 1959. There were neither marriages nor births. The population fluctuates with the whaling season; in the winter the total declines to about 100.

Chapter 2: Occupations and Wages

Whaling and, to a small extent, sealing—with the necessary auxiliaries of repair shops—are the only occupations in South Georgia. Labour is recruited from overseas, mainly from Norway and the United Kingdom, on special terms adopted by the whole whaling industry. The whaling season is from October to March and the men work about 60 hours a week. During the remainder of the year the average number of working hours is 46. Sealing operations are conducted only from Grytviken.

There is a system of bonuses according to production and, besides wages and bonuses, all hands are provided with quarters, light and food, which, although plain, is good and plentiful. All foodstuffs are supplied by the whaling companies, and no cost-of-living bonus is awarded. There are no private traders, but each station has a "slop chest" where clothing, tobacco, etc., may be purchased.

Chapter 3: Public Finance and Taxation

REVENUE for 1958-59 amounted to £450,070, of which £264,099 was received from Her Majesty's Government in the United Kingdom as a grant towards the cost of the Falkland Islands Dependencies Survey. Expenditure was £556,111. In 1957-58 ordinary revenue was £186,081 and the grant from Her Majesty's Government was £273,170, making a total of £459,251. Expenditure for the same period amounted to £536,425.

The revenue and expenditure figures during the last five financial years are as follows:

		Revenue	Expenditure
		£	£
		300,327	308,511
		1,308,168	1,097,135
		, ,	1,018,256
		,	536,425
•		450,070	556,111
	 · · · · · · · · · · · · · · · · · · ·	· · · ·	£ 300,327 1,308,168 867,679 459,251

The general revenue deficit balance at 30th June, 1959, was £23,378 and on the same date the Reserve Fund amounted to £120,000. The Dependencies financial year is from 1st July to 30th June.

The main heads of taxation are customs and income tax (for details see pp. 14 and 15). Revenue received was as follows:

		Import	Export	Income
		Duties	Duties	Tax
		£	£	£
1957–58		11,220	57,203	55,588
1958–59		14,884	68,513	70,265

Chapter 4: Currency and Banking

LEGAL tender consists of Falkland Islands Government currency notes of £5, £1 and 10s. denominations and United Kingdom coinage.

There are no banks, but facilities are provided by the Administration for deposits in the Government Savings Bank at Stanley and for remitting funds abroad.

Chapter 5: Commerce

EXCEPT for a certain amount of whale meat and fish, all Dependencies requirements of foodstuffs are imported.

The value of imports and exports for the years 1958 and 1959 was:

Imports (including imports from High Seas for re-export)

· · · · · · · · · · · · · · · · · · ·			A /	
			1958	1959
			£	£
Food		•	235,851	240,392
Beverages and tobacco			21,544	18,825
Crude materials, inedible, except fuels .			32,296	13,513
Mineral fuels, lubricants and related materia	ls.		1,004,890	452,941
Animal and vegetable oils and fats		•	372,800	171,492
Chemicals		•	97,740	51,787
Manufactured goods classified chiefly by ma	terials	s .	332,312	156,467
Machinery and transport equipment .		•	230,793	149,968
Miscellaneous manufactured articles .	•	•	67,607	29,502
TOTAL IMPORTS .		•	£2,395,833	£1,284,887

Principal Imports and Sources of Supply, 1958

Item	Value	Quantity	Principal Suppl Countries	ying
Mineral fuels, lubricants and related materials	£ 1,004,890	Tons 115,977	Venezuela Argentina Norway	£ 388,000 235,581 139,871
Animal and vegetable oils and fats	372,800	4,927	High Seas	372,800
Manufactured goods classified chiefly by materials	332,312	2,438	Norway United Kingdom	135,468 177,457
Food	235,851	1,862	United Kingdom Argentina Norway	95,310 84,242 67,598

Principal Imports and Sources of Supply, 1959

Item	Value Quantity		Principal Supplying Countries		
Mineral fuels, lubricants and related materials	£ 452,941	Tons 60,313	Dutch West Indies Canary Islands United Kingdom	60,295	
Food .	240,392	1,229	United Kingdom Argentina Norway	58,140 35,399 35,261	
Animal and vegetable oils and fats	171,492	4,359	High Seas	170,690	
Manufactured goods classified chiefly by materials	156,467	749	United Kingdom Norway	82,216 71,410	

Principal Supplying Countries

					1958 £	1959 £
Norway	•	•			571,480	221,675
United Kingdom	•	•	•	•	435,554	350,777
Venezuela .	•	•	•	•	388,000	
Argentina .		•	•	•	376,966	52,285
Netherlands (Ant	illes)	•	•	•	105,804	317,468

Sources of Imports

				1958	1959
				%	%
Commonwealth			•	22.89	27.33
Foreign countries	•		•	61.49	50.74
High Seas .				15.62	21.93

Domestic Exports

	Value			Quantity			
Whale oil and seal oil Other whale products	•	1958 £2,396,406 1,246,327	1959 £1,373,600 879,835	1958 208,740 barrels 32,187 tons	1959 127,350 barrels 17,242 tons		
TOTAL VALUE		£3,642,733	£2,253,435				

Re-exports

		Valı	ue	Quantity		
		1958	1959	1958	1959	
Whale oil	•	£345,241	£103,855	4,947 tons	1,479 tons	
Meat extract	•	-	111,150		111 tons	
Fuel oil		91,200	60,752	11,400 tons	7,594 tons	
Empty containers .		33,147	38,855	4,548 (No.)	276 (No.)	
Goods returned for repair	•	36,259	17,392	98 tons	37 tons	
Cine films	•	1,200	77,277	80 (No.)	88 (No.)	
TOTAL VALUE		£507,047	£409,281			

Destination of Exports (including re-Exports)

(a) by value

						1958	1959
						£	£
United Kingd	lom	•	•	•		2,460,954	1,771,473
Holland		• ′	•	•		1,309,755	803,041
Norway		•	•	•	•	154,499	6,963

(b) by percentage of total value

				1958	1959
				%	%
Commonwealth	•		•	59.30	66.36
Foreign countries		•	•	38.51	31.17
High Seas .	•			2.19	2.47

Chapter 6: Production

Whaling and sealing are the only industries in the Dependencies and the by-products of the whale, such as meat-meal, guano and meat extract are the sole products. The whaling season lasts for six months, from October until March. The sealing season is from March to November. For the primary purpose of assisting whaling operations the Government has, since January, 1950, maintained a meteorological station in South Georgia, and in 1959 there were

eight other meteorological stations in various parts of the Dependencies manned by personnel of the Falkland Islands Dependencies Survey.

Whaling

There are three whaling stations, all of which are in South Georgia, and a ship repair base with a dry dock at Stromness.

The average price of first-grade whale oil in 1957-58 was £78 per metric ton; in 1958-59 it was £72 (estimated) per metric ton.

In the 1957-58 season, 3,356 whales were killed, giving 161,485 barrels of oil valued at £2,152,953. Some 20,283 metric tons of meat and bone meal were produced, worth £1,095,314. In the 1958-59 season 2,504 whales were killed, giving 102,638 barrels of oil valued at £1,100,663. Meat and bone meal produced amounted to some 14,704 metric tons, worth £759,594.

The following table shows the catch and production of whales for the past six seasons:

Season		Number of Whales	Oil (barrels)	Meat and Bone Meal (metric tons)	
1953-54 1954-55 1955-56 1956-57 1957-58 1958-59	- · · ·	-	3,654 3,266 3,001 3,068 3,356 2,504	184,836 180,766 172,363 147,524 161,485 102,638	16,661.6 17,073.4 12,431.4 17,293.9 20,283.6 14,704.1

Sealing

This is confined to the surplus males of the herds of elephant seals (*Mirounga leonina*) and exploitation is strictly controlled by the Administration. On the recommendation of the Falkland Islands Dependencies Survey biologist, the annual catch was restricted to 6,000 for a five-year period starting in 1952 and sealing is only permitted in three of the four sealing divisions of South Georgia, one division being rested each year by rotation.

Chapter 7: Social Services

EDUCATION

THERE were four children of school age in South Georgia in 1959. There are no education facilities, but books and materials are obtainable from the Education Department in Stanley.

HEALTH

Apart from the common cold introduced from visiting ships, the Dependencies were remarkably free from sickness.

The whaling companies employ their own doctors, and maintain well-equipped hospitals. Government contributed a share of the salary of the Medical Officer at Grytviken. A dentist, appointed and paid by Government but equipped by the whaling companies, is also stationed at South Georgia.

HOUSING

All Government officials are provided with quarters and the accommodation provided by the whaling companies for the men working on the stations is adequate. Three new Government houses were completed during 1958.

SOCIAL AMENITIES

Each of the whaling companies has its own cinema. Football is the most popular sport in summer and ski-ing in winter.

Chapter 8: Legislation

LEGISLATION enacted for the Dependencies during the period under review included the following measures:

1958

- No. 1. The Appropriation (Dependencies) (1958-59) Ordinance, providing for the service between 1st July, 1958, and 30th June, 1959.
- No. 3. The Application of Colony Laws Ordinance, applying the following Colony law to the Dependencies:

 The Harbour (Amendment) Ordinance, 1958.

1959

- No. 2. The Application of Colony Laws Ordinance, applying the following Colony laws to the Dependencies:

 The Customs (Amendment) Ordinance, 1959.

 The Foreign Judgments (Reciprocal Enforcement)

 Ordinance, 1959.
- No. 4. The Appropriation (Dependencies) (1959-60) (Amendment) Ordinance, providing for the service between 1st July, 1959 and 30th June, 1960.

No. 5. The Application of Colony Laws (No. 2) Ordinance, applying the following Colony laws to the Dependencies:

The Whale Fishery (Amendment) Ordinance, 1959.
The Pensions (Amendment) Ordinance, 1959.
The Defence Force (Amendment) Ordinance, 1959.
The Application of Enactments Ordinance, 1959.
The Pensions (Increase) Ordinance, 1959.
The Whale Fishery (Amendment) (No. 2) Ordinance, 1959.

Chapter 9: Justice, Police and Prisons

THE Administrative Officer at South Georgia is also the Magistrate. He sits at Grytviken in the first instance, and the Supreme Court in Stanley is common to all the Dependencies. Two police constables are stationed at South Georgia.

The following offences were committed in 1958-59:

Against the Customs Ordinance	•			3
Against the Larceny Act, 1916			•	2
Against the Seal Fishery Ordinance			•	1
Against the Harbour Ordinance		•	•	1

There is a small prison at Grytviken; one of the police constables acts as gaoler when required.

The base leaders of the Falkland Islands Dependencies Survey are appointed Magistrates.

Chapter 10: Public Utilities

THERE are no public utilities. The whaling stations and the Government station have their own water and electricity supplies. The capacity of the Government electric power station is 177 kW, generating at 230/400 volts 50 cycles.

Chapter 11: Communications and Transport

WITH the exception of a mail voyage by R.M.S. Darwin in June of each year there is no regular sea communication between South Georgia and Stanley. During the whaling season the opportunity occurs for the passage of mails direct between Europe and the

River Plate and South Georgia. Ships of the pelagic fleet call at South Georgia on their way to the whaling grounds in November and again on their return journey in March.

South Georgia is usually visited on several occasions by the R.R.S. John Biscoe and the R.R.S. Shackleton in the course of their annual supply and relief tours of the Dependencies. H.M.S. Protector also pays a number of calls.

Three floating docks are maintained by the whaling companies at South Georgia, one at Grytviken and two at Stromness Harbour. The floating dock at Grytviken is 133 feet long and 34 feet broad; it has a lifting capacity of 600 tons. It will house vessels up to 140 feet in length and 15 feet 6 inches draught. The larger dock at Stromness is 150 feet long and 34 feet wide; this will accommodate vessels up to 160 feet in length and 15 feet in draught. There is a dry dock at Stromness which is capable of taking a vessel with a displacement of 975 tons.

There are two ports of entry in the Dependencies, one at Grytviken, South Georgia, and the other at Port Foster, Deception Island, in the South Shetlands.

The following ships entered at South Georgia in 1958 and 1959:

				1	1958		1959	
Nationality			Vessels	Tonnage	Vessels	Tonnage		
British		•		45	94,318	48	84,440	
Others				20	55,194	16	44.238	

The tonnage represents the total net register.

Post offices are maintained at each of the F.I.D.S. bases and at South Georgia. Because of the enthusiasm of philatelists the sale of stamps is a large item in the revenue of the Dependencies.

The Colonial Wireless Station at Grytviken is in regular communication with Stanley through which traffic passes overseas.

Chapter 12: Meteorological Services

THE Falkland Islands and Dependencies Meteorological Service (which was established in 1950) is constituted as an integral part of the Falkland Islands Dependencies Survey and embraces also the forecasting offices at South Georgia and Stanley, Falkland Islands. The headquarters of the Service is at Stanley and the cost of its operation is carried on the Dependencies' budget with a small contribution from the Colony.

The general functions of the service are:

- (i) provision of forecasting services for the whaling fleets operating in the waters of the Falkland Islands and Dependencies, and for any aircraft in these areas;
- (ii) provision of local forecasts in the Falkland Islands for the general public, for coastal shipping, and the Government Air Service;
- (iii) the organisation of meteorological observations in the Falkland Islands and Dependencies, and the broadcasting of this information in the form of collective synoptic messages designed for international use;
- (iv) the collection and publication of climatic data;
- (v) limited investigations into the meteorology of the Falkland Islands and Dependencies' area.

Forecasting Services

Forecast bulletins were broadcast from Stanley and South Georgia during the whaling seasons, and local area forecasts for both the Falklands and South Georgia were issued throughout the period.

During 1958 aviation forecasts were supplied, on request, to the United States Weddell Sea base, Ellsworth.

Reporting Stations and Collective Broadcasts (FICOL)

Full reporting stations were maintained at Stanley, Grytviken, and the F.I.D.S. bases at Signy Island, Admiralty Bay, Deception Island, Hope Bay, Argentine Islands, and Horseshoe Island. Observations were also received from Halley Bay, which was a Royal Society station in 1958, and a F.I.D.S. base in 1959. Another F.I.D.S. base at Loubet Coast closed at the end of 1958.

The radio-sonde stations at Argentine Islands and Halley Bay made daily ascents at 1100 G.M.T. with extra ascents at 2300 G.M.T. during World Meteorological Intervals. Two subsidiary stations were maintained in the Falkland Islands throughout the period. During 1958 surface and upper air observations were also collected from Ellsworth.

All synoptic reports and upper air results were transmitted to Stanley in several radio schedules each day. During 1958, these were re-transmitted eight times daily in collective messages (FICOLS) at 0430, 0645, 1030, 1300, 1600, 1900, 2215 and 0000 G.M.T. In 1959 the number of FICOLS was reduced to three and only reports for the main synoptic hours were re-broadcast. Broadcast times were 0100, 1300 and 1900 G.M.T., the 0600 G.M.T. reports being

included as "retards" in the 1300 G.M.T. transmission. Reports from ships were included when available. All broadcasts were made on two frequencies simultaneously. During the first half of 1958 the main broadcast was made with a Marconi $3\frac{1}{2}$ kW transmitter but during the latter half of 1958 and all through 1959, a new transmitter generating about 7 kW was used.

Climatological Work

Daily returns were prepared for all stations and annual tables, which included frequency summaries were issued for 1955, 1956 and 1957. During 1958, special climatological forms required for the International Geophysical Year were completed at monthly intervals and forwarded to the Meteorological Office, London.

Upper Air Unit, Stanley

As at Argentine Islands and Halley Bay, regular daily flights were made at 1100 G.M.T., with extra ascents at 2300 G.M.T. during World Meteorological Intervals. Using British radio-sonde and wind-finding equipment the unit measures temperatures, humidities and winds to a high level, frequently over 60,000 feet. During 1958 the Air Ministry accepted financial liability for the unit, but with effect from 1st January, 1959, the main financial responsibility was transferred to the Ministry of Transport and Civil Aviation with contributions from F.I.D.S. and Air Ministry. All results are included in the collective messages and climatological publications of the local service.

Staff

Air Ministry Meteorological Office provided the staffs of the Headquarters Meteorological Office and the Upper Air Unit in Stanley. Other staffs were recruited directly.

Further details of the Meteorological Service are available in its annual reports, which are published by the Government Printing Office at Stanley and may be obtained either through the Meteorological Service in Stanley, or the Crown Agents for Oversea Governments and Administrations in London.

Chapter 13: Falkland Islands Dependencies Survey

SUMMER ACTIVITIES IN 1957-58

For the first time a programme of intensive work from ships operating in the summer season was planned.

The main task was to provide ground control for the aerial photography of the South Shetland Islands. In addition to this a programme of geology and a survey of Powell and Laurie Islands was arranged. A physicist was employed to work from the R.R.S. John Biscoe to make rock collections for subsequent palaeomagnetic examination, and a geologist to study the South Shetlands, particularly Deception Islands.

The R.R.S. Shackleton was holed in ice near the South Orkneys and, after being temporarily repaired by the shipwright staff of H.M.S. Protector she was forced to return to Stromness Harbour, South Georgia, for permanent repair. Part of the support for the summer parties was thus withdrawn. Adverse ice conditions also hampered shipping movements generally.

By the end of the summer the survey of Greenwich and Livingston Islands was complete, although the link from Greenwich to King George Island was weak. Nelson Island was left unfinished and the work in the South Orkneys was curtailed. The low priority Dundee and Brabant Islands schemes had to be abandoned.

Despite the unfortunate setbacks to the summer programme, much was achieved and the results proved that, north of latitude 65° S, such operations may cover a wider area in a shorter time than land-based activities. Further south the limited open season leaves time for little else but the relief and re-supply of land bases.

All bases were re-supplied by the Survey's two ships R.R.S. John Biscoe and R.R.S. Shackleton.

Base N, Anvers Island, was closed down and Base E, Stonington Island, was re-opened as a small field base.

WORK AT BASES IN 1958

By the beginning of the year the bases had had six months experience of the work required of them under the programme for the International Geophysical Year. The teething troubles had been overcome and the bases settled down to a routine of investigations into various aspects of the Polar sciences.

The geophysical observatory at the Argentine Islands undertook studies of magnetism, seismology, the vertical distribution of ozone, terrestrial and solar radiation, tides and long sea waves and glaciology. Upper air soundings were made daily to ascertain the vertical distribution of temperatures and humidity, and under suitable conditions of weather upper winds were also measured. Surface meteorological observations were recorded every three hours and transmitted to Stanley for re-broadcast over the International radio network.

Similar surface observations were made at most other bases.

On Regular World Days and at Special World Intervals the Argentine Islands and the base at Port Lockroy were called upon to increase their observational routines in accordance with the I.G.Y. programme.

Port Lockroy concentrated on a full programme of ionospheric investigations. Measurements were made of the height of various ionised layers, and the amount of energy absorbed from a radio wave during its transit through them. A special study of whistler atmospherics was made at the request of Dr. Morgan of the Thayer School of Engineering with equipment supplied by him.

Topographical surveys were planned to provide ground control for aerial photography by means of triangulation where possible. The main part of the survey was done from Hope Bay in the north of Graham Land and from the base at Detaille Islet situated at the north of Lallemand Fjord.

The survey work done from Hope Bay may be divided into two parts. The first requirement provided for a series of astronomical fixes in the area south of the East and West Russell Glaciers for mapping at a scale of 1:200,000. However, an accident to a theodolite curtailed this work. The second requirement was fulfilled by measuring a base line on James Ross Island and extending the triangulation across the Crown Prince Gustav Channel to the east coast of Trinity Peninsula. This provided the start to a complete triangulation of the north of Graham Land for mapping at a scale of 1:50,000.

The Detaille Islet party made a triangulation of the Loubet Coast and extended this scheme to the north of Marguerite Bay.

The base at Stonington Island, which was opened on 18th March, after having been closed since February, 1950, was also engaged in surveying. The best work of this base was done on a 59-day journey covering some 420 miles. Three men with three dog teams set off for Mushroom Island on 7th November, where they picked up a depot which they had laid earlier in the year. From Mushroom Island they spent some time travelling down the Wordie Shelf Ice to the Kinnear Mountains. From a point east of the Kinnear Range they travelled northwards, finding good routes along inland glaciers to the Traffic Circle on the Weddell Sea coast. They spent two weeks making a survey of Mobiloil Inlet as far as the Victory Nunataks before returning to base via Neny Trough, the Plateau, and Northeast Glazier. They were fortunate in having good travelling conditions.

Geological investigations were made from Hope Bay, Stonington Island, Detaille Islet, and Horseshoe Island. Work was done in the Crown Prince Gustav Channel and its outlying islands, Marguerite Bay, and Lallemand Fjord.

A series of dog-food trials on 18 selected dogs was carried out at Stonington Island. The object of the trials was to ascertain the merits of the dog trail ration, Nutrican, an improved Nutrican, and the traditional dog pemmican. No results of this work have yet been published.

Base Y, Horseshoe Island, Marguerite Bay, is the nearest Base to the only Emperor penguin rookery in the Graham Land area, and a visit to the rookery on the Dion Islets was planned to coincide with the breeding season at midwinter. A three-man party left Horseshoe Island on 27th May. That night a sudden gale broke up the sea ice between the base and the Dions. Despite intensive searches of the north of Marguerite Bay which were pursued until 17th July, no sign of the missing men was seen.

SUMMER ACTIVITIES IN 1958-59

During the summer months a party of six surveyors was embarked in H.M.S. *Protector*. By using the ship's Westland Whirlwind helicopters a link was provided between the triangulations of the Graham Land/Gerlache Strait and the South Shetlands across the Bransfield Strait. Tellurometers were used in the Dependencies for the first time during these operations and proved their value in making observations which would otherwise have been unobtainable.

The same party carried out a tellurometer/theodolite traverse to connect Robert, Greenwich, and Nelson Islands in the South Shetland group, and a base line was measured by tellurometer between the trigonometrical points on Breakwater and Useful Islands for the Gerlache Strait triangulation.

A three-man party led by a surveyor was landed by R.R.S. Shackleton on Robert Island. During the six weeks they were in the field they completed the triangulation link from Greenwich Island through Robert and Nelson Islands to King George Island for mapping 1:100,000.

Two and a half months were spent on Livingston Island by a biological party. Investigations into glaciology and geology were also made. During the summer of 1957–58 a colony of fur seals was discovered but it was not possible to determine whether they were breeding on the island.

Professor Linton of the Geography Department of Birmingham University spent part of the summer studying the physiography of the Graham Land area. He was assisted by a research student.

A reconnaissance of Joinville Island was made between 29th December and 14th March. During the first six weeks a complete examination of the island was made. The remainder of the time was spent in triangulation, and rays were observed to points on the mainland. The geology of Joinville Island was also studied.

Geologists also worked at Admiralty Bay and paid a brief visit to Flandres Bay.

The relief of the bases south of 65° S. was severely hampered by the failure of the winter sea ice to break up. A very important part of the summer relief programme of R.R.S. John Biscoe was to deliver a large base hut and aircraft hangar to Base E on Stonington Island from where aircraft would be used in 1960 to continue the survey and geological work southwards towards the centre of the continent of Antarctica. When it became apparent that R.R.S. John Biscoe would not reach this location or even Base Y, Horseshoe Island, and Base W, Detaille Islet, help was sought from the United States ice-breakers Edisto and Northwind. Despite every effort on the part of these two ships and the R.R.S. John Biscoe the ice proved too strong for penetration and the operation was abandoned.

The Horseshoe Island Base was relieved and partially re-supplied by the *Northwind's* helicopters, and the wintering party from Stonington Island was taken off after the men had sledged over the sea ice to Horseshoe Island.

The Detaille Islet Base was closed down and the men were taken off by sledge and helicopter.

Two field bases were closed down upon completion of their respective programmes—Base J at Ferin Head, and Base O on the Danco Coast.

WORK AT BASES IN 1959

Without Bases E and W the number of bases which were maintained over the winter by the Survey was reduced to eight.

On the 1st January, the Survey took over the Royal Society base of Halley Bay, which is situated on the shelf ice fringing Coats Land in latitude 75° S. Scientific investigations at Halley Bay were reduced slightly from the I.G.Y. level and a party of 12 men maintained a programme of investigations into surface and upper air meteorology, terrestrial magnetism, terrestrial and solar radiation, auroral physics, seismology, glaciology, oceanography and ozonemetry. In addition a study was made of the habits of the Emperor penguin.

The men on the base at Halley Bay worked under conditions which are not encountered anywhere else in the F.I.D.S. area of work. Four months of darkness over the mid-winter period and the extremely low temperatures which are normally associated with such a latitude impose special problems which are made no easier by the fact that the hut is buried under 15 feet of snow.

At Signey Island in the South Orkneys work was resumed on the biology of seals. Intensive bird ringing was continued as in previous years and a daily round of marked nests was made during the summer months. Every opportunity was taken to make a collection of fresh-water life during the brief spells of warm weather in the summer.

Topographical surveying, supervised by the Directorate of Overseas Surveys, was carried out in specific areas in the north Graham Land and Trinity Peninsula area and also on King George Island. Ground control for aerial photography for mapping at scales of 1:200,000 and 1:50,000 was the main object.

Geological investigations were made in the areas Crown Prince Gustav Channel, King George Island, and the north of Marguerite Bay.

A geomagnetic survey of the Tabarin Peninsula was started at Hope Bay.

Investigations of glacier movement, ablation and accumulation and other aspects of ice formation were made by the bases at Hope Bay and Admiralty Bay.

All bases made a local study of the distribution of sea ice.

The effect of cold on the human body was studied by a physiologist at Hope Bay and the medical officers at other bases made supporting observations.

THE TRANS-ANTARCTIC EXPEDITION

Sir Vivian Fuchs and his party wintered at Shackleton Base in Vahsel Bay, from where they set out on their historic crossing of the continent during the following spring and summer to Scott Base in the Ross Sea.

A full account of this expedition will be found in the book *The Crossing of Antarctica* by Sir Vivian Fuchs and Sir Edmund Hilary.

ROYAL SOCIETY EXPEDITION—HALLEY BAY $(75\frac{1}{2}^{\circ} \text{ S. } 26\frac{1}{2}^{\circ} \text{ W.})$

This well equipped base made geophysical observations for I.G.Y. purposes. The weather reports were transmitted to Stanley. Radiosonde with radar upper wind data enhanced the value of the weather observations.

It is expected that a full report on the work of the base will be published in due course.

ROYAL NAVAL HYDROGRAPHIC SURVEY EXPEDITION

During the summer months of 1957-58 a small naval hydrographic unit led by Lieutenant C. J. C. Wynne-Edwards continued its work of the previous summer in the waters of the west coast of Graham Land between Port Lockroy and Ferin Head. By using a modified version of the latest launch used by survey ships of the Royal Navy the unit successfully surveyed the Graham Land coast from the Lemaire Channel to Ferin Head.

In the past surveying in this area had been restricted to sledge parties with limited range on unreliable sea ice, and the advantages of using a good, well-found launch were indicated by the large amount of surveying that the party achieved in a comparatively short time.

PART III

Chapter 1: Geography

THE Falkland Islands Dependencies were defined by Letters Patent of 21st July, 1908 and 28th March, 1917. They constitute that sector of the Antarctic Continent lying between the meridians 20° West longitude, together with certain islands adjacent to the Antarctic mainland within this sector. In addition, the British claim includes the islands of South Georgia and the South Sandwich, South Orkney and South Shetland groups. The area is administered as a Dependency of the Falkland Islands, with resident magistrates in South Georgia and at all the bases of the Falkland Islands Dependencies Survey. Both Argentina and Chile claim sovereignty over parts of this territory and maintain bases on certain of these islands and in Graham Land.

The general aspect of the Dependencies is distinctly inhospitable. The islands and the Graham Land peninsula are mountainous and difficult of access; the continental interior is part of the largest icesheet in the world. The climate is excessively stormy along the margins of Antarctica and exceptionally cold in high southern latitudes. With the exception of the whaling and sealing which has been carried on round the coasts of the continent and adjacent seas, there has been no economic activity in the area. Moreover no resources have been discovered which could justify permanent settlement within the area. Nevertheless, the Falkland Islands Dependencies have become the scene of conflicting claims of sovereignty during the last fifteen years. Owing partly to the need for supporting these territorial claims by continuous residence, and partly to the increasing demand for detailed scientific knowledge about Antarctica, the post-war years have been a period of unprecedented activity. This period has culminated in the work carried out during the International Geophysical Year (1957-58), since when scientific purpose has largely overridden political consideration.

The Falkland Islands Dependencies may be conveniently divided into two distinct geographical areas. These are, first, the islands and Graham Land peninsula, which are rugged and mountainous, situated along the structural weakness known to geologists as the Scotia Arc. Secondly, there is the continental part of the Dependencies which consists, almost everywhere, of an elevated and largely featureless ice plateau.

It will be appreciated that although Graham Land and many of the islands are now comparatively well known and well mapped, these represent only a fraction of the total land area of the Dependencies.

GEOLOGY AND GLACIOLOGY

The Scotia Arc has long been recognised as part of the tertiary fold axes which border the Pacific Ocean. The geological continuity between the southern Andes and Graham Land was recognised as long ago as 1904. Recent geological work has confirmed that this early hypothesis is still valid.

The geological structure of the area is extremely complex. Rocks of all ages occur from the Archaean basement complex of the South Orkney Islands and Marguerite Bay to the tertiary sedimentary rocks of the South Shetland Islands and Trinity Peninsula and recent volcanic rocks of Deception Island, King George Island and the South Sandwich Islands. Most of the pre-tertiary rocks are intensely folded and altered. Seismic and volcanic activity still occurs in some of the islands. No minerals of economic importance have so far been discovered.

The topography along the Scotia Arc is that of mountainous islands rising abruptly from the sea to heights as great as 9,000–10,000 feet. The Graham Land peninsula comprises a very narrow plateau at 6,000 feet or thereabouts with extremely precipitous slopes towards the coasts of the Weddell and Bellingshausen Seas. The mountains are heavily glacierized and extremely broken glaciers descend to sea-level. The greater part of the land is snow-covered except where it is too steep for snow to accumulate. South Georgia, which is the northern-most island, in the equivalent latitude of York and only 2° or 3° south of the latitude of the Falkland Islands, has a summer snow-line at about 1,000–1,500 feet. Elsewhere in the Dependencies, however, the snow-line reaches sea-level and only a few favoured localities are snow-free in summer.

Southwards from Graham Land, the Antarctic continental icesheet rises to heights exceeding 10,000 feet, and away from the coasts only the highest mountains penetrate the thick blanket of ice whose topography is largely independent of underlying irregularities in the rock floor. Very little is known of the geological structures underlying the ice. In the southern part of the Weddell Sea, however, preliminary reports about the Theron Mountains from the Commonwealth Trans-Antarctic Expedition suggest affinity with the rock succession in Southern Africa. Along certain coastal areas there are large masses of land-fast ice which project far beyond the true shoreline. The origin of this shelf-ice, as it is called, is still not properly understood. It is certainly maintained by local accumulation from snowfall rather than the outward movement of the true land ice of the continental glaciers. It is often afloat, moving with the tides; elsewhere it is aground on small islets or irregularities of the sea bed. In some places, the movement of the inland glaciers imparts an outward movement to the shelf-ice, in others there is little or none. The outward edge of the shelf-ice is generally a steep ice-cliff 100 to 200 feet high, which frequently "calves" to form the characterictically tabular icebergs of the southern seas.

CLIMATE

The continental interior of Antarctica represents the major reservoir of cold air in the southern hemisphere. The continent is large, compact, high, and situated more or less symmetrically about the South Pole. Thus the intense cooling during winter, when the sun is absent from much of the continent, accounts for the lowest temperatures which have ever been recorded upon the surface of the earth. The absolute maximum recorded at the U.S. base at the South Pole during the winter of 1957 was -102° F. The configuration of the ice-cap permits the katabatic flow of air towards the coasts. Although the air is considerably warmed by descent to lower altitudes, it is still very cold when it reaches sea-level. During winter, therefore, the coastal waters are frozen and the pack-ice may extend a long way from the coast. The presence of this ice has important meteorological consequences, for an unbroken belt of sea-ice will have similar effects upon temperature to a snow-covered lowland and the ameliorating effects of open ocean do not occur. In consequence, very low winter temperatures may be experienced at great distances from the continent. For example, the South Orkney Islands, which lie in latitude 61° South—some 1,100 miles from the nearest part of the continental ice-sheet—have experienced surface temperatures as low as -40° F. during winter when the pack-ice was extensive.

In summer, despite the greater solar radiation, the warming of the atmosphere is insufficient to melt the winter accumulation of snow. The pack-ice tends to disperse, but the marginal seas are slow to warm so that even along the open coasts the air temperature generally remains a little below freezing point.

Generally speaking, the atmospheric circulation over Antarctica is anti-cyclonic. Although the continental high pressure systems have neither the extent nor permanence suggested by earlier writers,

the pressures recorded within the continental interior are normally higher than those over the peripheral oceans and, in consequence, the winds near the edge of the ice-cap are predominantly easterly. This easterly circulation governs the movement of surface water and pack-ice around the fringes of Antarctica. Further north, the circulation is predominantly westerly and an almost unbroken series of depressions sweeps through the oceanic spaces between Antarctica and the southern extremities of America, Africa and Australia. The polar front, which is generally situated in this area, forms the dividing line between the cold air masses derived from Antarctica and the warmer air from the subtropical anti-cyclones of the South Pacific and South Atlantic Oceans.

The weather of the oceanic areas of Drake Passage and the Scotia Sea, where the various island groups of the Falkland Islands Dependencies are situated, is characteristically stormy and variable. The sky is overcast for a considerable proportion of the year, gales are frequent, the temperature fluctuates violently according to the presence of warm or cold air masses, and it snows nearly every day.

At Cumberland Bay, in South Georgia, the mean monthly temperature varies between 42° F. in February and 28° F. in August. In higher latitudes the temperature seldom rises far above freezing point and may fall very low indeed. In the South Orkneys, South Shetlands, and western Graham Land, mean temperatures are commonly 30° F. to 32° F. in January, falling to 5° F. to 10° F. in July or August. In South Georgia, about 60 inches of precipitation are recorded annually, much of which falls as snow. Further south, rain is almost unknown and there are no reliable measurements of the total annual snowfall. In the continental interior the climate at all seasons is less stormy but always very cold.

PLANT AND ANIMAL LIFE

In South Georgia the climate is sufficiently temperate to support the growth of twenty species of hardy grass and other flowering plants. Reindeer have been introduced and thrive, having increased from 11 in 1909 to about 2,000 today. In the rest of the Dependencies, only two species of vascular plant are known and these are confined to the most favourable localities. Elsewhere the snow-free ground is partly covered with mosses and lichens. There are no terrestrial mammals.

All other forms of life are restricted to the open ocean and to the coastal waters. The sea, itself, is teeming with life from the smallest unicellular organisms at one end of the food chain to the largest mammals at the other. All forms either spend their whole existence in the sea, or only come ashore to breed and moult, as do the birds and seals. The majority of those species which do breed on the coasts of Antarctica seldom venture far inland and generally migrate to temperate latitudes during the winter. The fauna of these seas are, on the whole, few in species but very rich in numbers. For example, the diminutive Wilson's Storm Petrel (Oceanites oceanicus), which is believed to be the commonest of all birds, breeds almost exclusively along the shores of Graham Land and the islands of the Scotia Arc.

Only the seals and whales have any economic value. The seals were first exploited in South Georgia a few years after the visit of Captain Cook in 1775. Those in the South Shetland and South Orkney Islands were virtually exterminated during the five years 1819-24. The principal species were the southern fur seal (*Artocephalus australis*) which is only now beginning to return to some of the islands where it was most plentiful. The large oil-bearing elephant seal (*Mirounga leonina*) was also exploited during the first half of the nineteenth century, but recovered more quickly and has been taken under licence in South Georgia for more than fifty years. The other species of Antarctic seal are too solitary in their behaviour to warrant economic exploitation.

Whaling began early in the twentieth century and has grown into a highly specialised industry. From the beginning, South Georgia has been the most important centre of the industry and shore factories have operated at Grytviken, Leith Harbour, Husvik, Godthul and Prince Olaf Harbour, though only three now operate (only two during the 1957-58 season). The summer population of South Georgia averages 1,200-1,400, nearly all Norwegian. In winter, the resident population now falls to a little more than 100. The administrative centre is at Grytviken. There were formerly small shore factories operating at Deception Island in the South Shetlands, and Signey Island in the South Orkneys. These ceased to function some years before 1939. During the last twenty years, increasing use has been made of pelagic factory ships which can operate in open ocean throughout the whaling season. There are five speciesof whale common in these waters, but only two, the blue whale (Balaenoptera musculus) and the fin whale (Balaenoptera physalus), can really be regarded as having great economic importance, though the sperm whale is also taken in substantial numbers.

In recent years there has been growing concern about the future of the whaling industry. The rate of killing has exceeded the reproduction and growth rates of these mammals for many years so that the stock comprises fewer and smaller whales than formerly.

History 79

Attempts by the International Whaling Commission to limit the whaling season, to limit the size of the catch, and to provide adequate inspection on all vessels, has reduced the rate of killing but cannot give the protection which is necessary to preserve the stock for more than a few decades.

Chapter 2: History

THE history of the Falkland Islands Dependencies is partly the history of exploration in this sector of Antarctica, partly the history of the whaling industry. Discovery within the Dependencies largely falls into two distinct phases; the initial discovery of the northern islands and Graham Land peninsula during the period 1775 to 1825, and secondly the discovery of the continental interior during the expeditions of the twentieth century.

South Georgia was sighted at least twice between 1675 and 1756, but the first landing was that of Captain James Cook in 1775. The South Sandwich Islands were discovered by him also during the same voyage. Thereafter, South Georgia was frequently visited by sealers of many nationalities, who reaped a rich harvest from the immense number of fur seals and elephant seals which frequented these shores. By 1815, the slaughter of seals had reached such proportions that sealers were beginning to look elsewhere for them. The South Shetland Islands were discovered by William Smith in 1819, and during the next few years practically all the islands in the vicinity of northern Graham Land had been visited. The first sighting of the mainland of Antarctica is a matter for dispute, for conflicting claims have been put forward by different authorities on behalf of Edward Bransfield (Britain), N. B. Palmer (United States), and Thaddeus Bellingshausen (Imperial Russia). Certainly all three explorers sighted different parts of the western coast of Graham Land within a few weeks of one another during the summer of 1819-20. These initial discoveries were followed by a period of intense activity by sealers. The first wintering in Antarctica was made during 1820 on King George Island in the South Shetlands by the shipwrecked crew of the sealer Lord Melville. The South Orkney Islands were discovered by George Powell in 1821. The seals on all these coasts were quickly exterminated so that, after 1830, there were very few visits to them.

The second phase of Antarctic history was that of the early scientific expeditions. With the exception of the British Antarctic Expedition (1839 to 1843) commanded by Captain James Clark Ross, which visited the extreme north of Graham Land, the major

Antarctic discoveries occurred between 1898 when the *Belgica* expedition wintered in the Bellingshausen Sea and 1915, when Shackleton's *Endurance* was crushed in the pack-ice of the Weddell Sea. During these years, the activities of Shackleton, Scott and Bruce of Great Britain, Mawson of Australia, Charcot of France, Amundsen of Norway, Nordenskjold of Sweden, and Drygalski and Filchner of Germany, provided our basic scientific knowledge of Antarctica by penetrating beyond the coastal fringe and wintering at different places around the edge of the continent. The presence of large tracts of shelf-ice and the continental ice-sheet were demonstrated by the inland journeys towards the geographical and magnetic poles.

This was the heroic era of Antarctic exploration when parties suffered extreme privation, owing to lack of knowledge about shelter, clothing, nutrition and transport in such extreme climatic conditions. The perseverance of the early explorers, in the face of such difficulties, their failures as well as their successes, led to the accumulation of specialised knowledge which, combined with the technical facilities of today, has been invaluable to the present-day explorers.

The following expeditions were particularly active in the Falkland Islands Dependencies. Details of the literature regarding each expedition are given in the Reading List on pp. 84-7).

_				
	Nationality, etc.	Leader	Vessel	Region
1897–99	Belgian Antarctic Expedition	A. de Gerlache	Belgica	W. Graham Land Bellingshausen Sea
1901–03	Swedish South Polar Expedition	O. Nordenskjold	Antarctic	E. Graham Land
1902–04	Scottish National Antarctic Expedition	W. S. Bruce	Scotia	S. Orkney Islands Eastern Weddell Sea
1903-05	French Antarctic Expedition	J. B. Charcot	Francais	W. Graham Land
1908–10	French Antarctic Expedition	J. B. Charcot	Pourquoi Pas	W. Graham Land
1910–12	German South Polar Expedition	W. Filchner	Deutschland	Weddell Sea
1914–16	British Imperial Trans-Antarctic Expedition	E. H. Shackleton	Endurance	Weddell Sea

The base established by W. S. Bruce at Laurie Island, South Orkney Islands, was handed over by Bruce to the Argentine Government for use as a meteorological observatory in 1904.

The principal development in the Dependencies took place in 1903, when C. A. Larsen founded the first modern whaling company based upon a shore factory in South Georgia. The industry immediately prospered and continued to expand quickly up to and during the first World War. In 1920, the Interdepartmental Committee on Research and Development in the Dependencies of the Falkland Islands recommended that some of the revenue derived from the whaling industry should be used for research, particularly into the

History 81

oceanography of the Antarctic seas and into the biology of the whale. In consequence, Discovery Investigations were inaugurated, partly as a shore-based marine biological unit at Grytviken, South Georgia, and partly as the sea-going unit aboard the Royal Research ship Discovery. In 1926, a year after the preliminary work began, Discovery Investigations acquired a second vessel, R.R.S. William Scoresby. Until 1939, the two vessels were almost continuously active in Antarctic waters. An enormous volume of valuable oceanographical, biological, and meteorological data was acquired, the analysis of which is by no means completed today.

During the inter-war period, there were few major land expeditions to Antarctica. Nevertheless, during the 20 years from 1919 to 1939, a considerable part of the unknown coasts were defined for the first time during summer voyages. In addition to the activities of Discovery Investigations, the summer expeditions of Lars Christensen the Norwegian whaling magnate, and Sir Douglas Mawson, all contributed to our knowledge of the coasts of Antarctica.

In the Falkland Islands Dependencies, the work of Discovery Investigations was of prime importance. In addition to the zoological and oceanographical work carried out at sea throughout the year, a certain period of each commission was devoted to inshore surveys of the various island groups of the Dependencies. Thus hydrographic surveys were made of parts of South Georgia, the South Sandwich Islands, the South Orkney and South Shetland Islands. During this period also, the first flights by the light aircraft used by Wilkins and Ellsworth paved the way to the considerable use of aircraft in Antarctica during the post-war period.

The British Graham Land Expedition of 1934-37 was of considerable importance to the subsequent exploration of the Falkland Islands Dependencies. The expedition was commanded by John Rymill, who, with many other members of the party, had received his training in the Arctic with H. G. Watkins during the early 1930's. They wintered at the Argentine Islands (65° 15′ S., 64° 16′ W) off the west coast of Graham Land in 1935, and at the Debenham Islands in Marguerite Bay (68° 08′ S., 67° 07′ W.) in 1936. During the second season, they were able to confirm that the Graham Land peninsula was continuous and was not, as previously thought, intersected by ice-filled straits. To the south of Marguerite Bay, they discovered the great rift of King George VI Sound which separates Alexander Land from the mainland.

In 1939, an American party established a base in Marguerite Bay at Stonington Island. This party formed the west base of the United

States Antarctic Service Expedition, and was commanded by Richard Black. It was able to expand the discoveries of the British Graham Land Expedition and, by a series of flights, was able to show the southward continuation of the Graham Land peninsula to its junction with the Filchner Ice Shelf in the Weddell Sea. The first overland crossing of the peninsula was also made. This party was evacuated by air in 1941. Another U.S. expedition, commanded by Finn Ronne, returned to Stonington Island in 1947-48 and co-operated with the Falkland Islands Dependencies Survey base in the same locality.

During the early years of the war, there were other forms of activity in the Falkland Islands Dependencies. Norwegian whaling fleets continued to operate in the Antarctic, although, in January, 1941, a substantial part of the pelagic fleet was captured by the German armed surface raider *Pinguin*. At South Georgia, one shore station managed to operate throughout the entire war. Between 1942 and 1943 visits were made to the South Shetland Islands and Graham Land by Argentine vessels, claiming sovereignty to a sector of Antarctica which is almost the same as that defined above as the Falkland Islands Dependencies. British vessels also visited these shores to renew existing claims.

Despite the state of the war, it was obvious that some attempt should be made further to protect the British claims to the Dependencies. In consequence, a small naval party was formed in 1943 for the purpose of establishing bases in the more accessible islands and mainland. On 6th February, 1944, the first base was established in the abandoned whaling station at Deception Island. A second base was established at Port Lockroy on Wiencke Island, off the west coast of Graham Land.

With the establishment of the first two bases, the pattern of the survey began to take form. At first it was a naval operation (codename "Tabarin") but, after the end of the war, the responsibility was transferred to the Colonial Office. The Falkland Islands Dependencies Survey, as it was afterwards called, was first administered by a committee in London, with an experienced leader in the field at the largest base. After 1949, however, the Survey became the direct responsibility of the Governor of the Falkland Islands with a permanent headquarters and secretariat in Stanley. A scientific committee in the United Kingdom was convened to advise the Governor on scientific programmes.

The following table shows the number of bases and total size of wintering parties during each year that the Survey has operated. For comparison, figures are shown for the comparable Argentine

and Chilean parties which have wintered at their own bases during the same years. The Argentine and Chilean bases are largely manned by military units.

	F.I.	D.S.	Arc	GENTINE	Сніс	
Year	Bases	Men	Bases	Men	Bases	Men
1944	2	14	1	about 7	0	0
1945	3	21	ī	7	ŏ	0
1946	5	30	î	" 7	ŏ	0
1947	5	33	$\dot{2}$	" 16	1	6
1948	7	38	<u>3</u>	about 25	2	12
1949	5	29	3	25	2	13
1950	6	26	3	,, 23 31	Ź	13
1951	5	24	5	41	3	19
1952	7	39	6	62	3	about 21
1953	7	37	7	79	3	21 21
1954	7	48	7	about 72	3	37
1955	8	57	ģ	85	1	1 1
1956	10	76	8	about 75	4	34 about 35

The work of the Falkland Islands Dependencies Survey has largely been concerned with the exploration of Graham Land and the islands of the Scotia Arc. Although certain important discoveries have been made, especially along the eastern coasts of the peninsula and in King George VI Sound, there has so far been no attempt to carry the exploratory work into the unknown continental interior.

The major distinction between the work of the Survey and that of the principal pre-war expeditions has been the concentration upon continuous routine observations and careful systematic investigations in the better-known parts of the Dependencies.

During the years after 1955, expeditions have been active in other parts of the Dependencies. The establishment of the Royal Society Expedition base at Halley Bay in Coats Land, the Commonwealth Trans-Antarctic Expedition base, Shackleton, near Vahsel Bay, and the Argentine and United States bases on the Filchner Ice Shelf represent the first successful attempts at wintering on the southern and eastern shores of the Weddell Sea. The United States base at the South Pole has given us the first detailed picture of climatic conditions in the continental interior. The successful crossing of the Antarctic continent by the Commonwealth Trans-Antarctic Expedition led by Sir Vivian Fuchs in 1957-58 has extended our knowledge of the continental sector of Antarctica.

Chapter 3: Administration

THE Dependencies are subject to the authority of the Governor and his Executive Council, the former being empowered under the Letters Patent of 1948 to legislate for the Dependencies.

An Administrative Officer and an official staff are maintained in South Georgia, and control over whaling operations in the Depen-

dencies is carried out by representatives of the Government, who may accompany the expeditions as required, and by Government whaling inspectors at the three stations.

There is no local government in South Georgia; in fact, there are no communities other than the whaling stations, which are run by the managers on behalf of the several companies owning them.

The headquarters of the Falkland Islands Dependencies Survey is in Stanley, and a London Office co-ordinates United Kingdom activities.

Chapter 4: Weights and Measures

IMPERIAL and metric weights and measures are in general use.

Chapter 5: Reading List

- Anderson, Major W. E. Expedition South. London, Evans Brothers, 1957.
- BAGSHAWE, T. W. Two Men in the Antarctic. Cambridge University Press, 1939.
- Bellingshausen, Thaddeus. The Voyage of Captain Bellingshausen to the Antarctic Seas 1819–1821. Edited by Frank Debenham, London. Hakluyt Society, 1945.
- BENNETT, A. G. Whaling in the Antarctic. London, Blackwood, 1931.
- BERNACCHI, L. C. Saga of the "Discovery." London, Blackie, 1938.
- British Grahamland Expedition, 1934–37. Scientific Reports. London, British Museum, 1940–41.
- Brown, R. W. R. A Naturalist at the Poles. London, Seeley, Service, 1923.
- CHARCOT, J. B. The Voyage of the "Why Not?" in the Antarctic. A Journal of the Second French South Polar Expedition, 1908-10. London, Hodder and Stoughton, 1911.
- CHRISTIE, E. W. HUNTER. The Antarctic Problem. London, Allen and Unwin, 1951.

- COOK, F. A. Through the First Antarctic Night. London, Heinemann, 1900.
- DAUTERT, ERICH. Big Game in Antarctica. London, Arrowsmith, 1935.
- DEBENHAM, FRANK. Antarctica. Herbert Jenkins Ltd., 1955.
- DISCOVERY COMMITTEE. The Discovery Reports, Vol. I. Cambridge University Press, 1929. To date 30 volumes of these reports have been published.
- FALKLAND ISLANDS DEPENDENCIES SURVEY. Scientific Reports. Her Majesty's Stationery Office, 1953-58. (Prices in brackets include postage.)
 - No. 1. Organisation and Methods. By V. E. Fuchs. A brief general statement of the area and the bases from which studies have been made. 4s. 6d. (4s. 11d.).
 - No. 2. A New Method of Age Determination in Mammals with Special Reference to the Elephant Seal. By R. M. Laws. 3s. (3s. 4d.).
 - No. 3. The Upper Cretaceous Cephalopod Fauna of Grahamland. By L. F. Spath. £1 10s. (£1 10s. 11d.).
 - No. 4. Lower Cretaceous Gastropoda Lamellibranchia and Annelida from Alexander I Land. By L. R. Cox. 5s. 6d. (5s. 10d.).
 - No. 5. Fossil Penguins from the Mid-Tertiary of Seymore Island. By B. J. Marples. 5s. 6d. (5s. 10d.).
 - No. 6. Emperor Penguin (I) Breeding Behaviour and Development. By B. Stonehouse. 10s. 6d. (11s. 3d.).
 - No. 7. The Geology of South Georgia (I). By A. F. Trendall. 8s. 6d. (8s 11d.).
 - No. 8. The Elephant Seal (I) Growth and Age. By R. M. Laws. £1 (£1 0s. 9d.).
 - No. 9. New Evidence of Sea-Level Changes in the Falkland Islands. By R. J. Adie, October 1st, 1952. 4s. (4s. 4d.).
 - No. 10. Emperor Penguin (II) Embryology. By T. W. Glenister. 17s. (17s. 7d.).
 - No. 11. Petrology of Graham Land (I) Basement Complex; Early Palaeozoic Plutonic and Volcanic Rocks. By R. J. Adie. 8s. 6d. (9s. 3d.).

- No. 12. Petrology of Graham Land (II) Andean Granite Gabbro Intrusive Suite. By R. J. Adie. 15s. (15s. 9d.).
- No. 13. Elephant Seal (II) General, Social and Reproductive Behaviour. By R. M. Laws. £1 10s. (£1 10s. 10d.).
- No. 14. Brown Skua of South Georgia. By B. Stonehouse. 10s. (10s. 5d.).
- No. 15. Elephant Seal (III) Physiology of Reproduction. By R. M. Laws. £1 7s. 6d. (£1 8s. 3d.).
- No. 16. Notes on Weather Analysis in the Falkland Islands Dependencies, Antarctica. By A. W. Mansfield and S. D. Glassey. 12s. (12s. 5d.).
- No. 17. Pygoscelid Penguins. (I) Methods of Study; (II) Adelie Penguin. By W. J. L. Sladen. £2 7s. 6d. (£2 8s. 6d.).
- No. 18. Breeding Behaviour and Reproductive Cycle of the Weddell Seal. By A. W. Mansfield. £1 (£1 0s. 7d.).
- No. 19. Geology of South Georgia (II). By A. F. Trendall. 25s. (25s 8d,).
- No. 20. Petrology of Graham Land (III) Metamorphic Rocks of the Trinity Peninsula Series. By R. J. Adie. 13s. 6d. (13s. 11d.).
- No. 21. Upper Jurassic and Cretaceous Ammonite Faunas of Alexander Land and Graham Land. By M. K. Howarth. 16s. 6d. (16s. 11d.).
- No. 22. Introduced Reindeer of South Georgia. By W. Nigel Bonner. 7s. (7s. 4d.).
- No. 23. The King Penguin of South Georgia. (I) Breeding Behaviour and Development. By Bernard Stonehouse. £1 5s. (£1 5s. 10d.).

Obtainable from Her Majesty's Stationery Office, except for items 1 to 15 which are obtainable only from F.I.D. Sc. Bureau, Crown Agents, 4, Millbank, London, S.W.1.

- FUCHS, SIR VIVIAN. Antarctic Adventure. Cassel & Co. Ltd., 1959.
- Fuchs, Sir Vivian and Hilary, Sir Edmund. The Crossing of Antarctica. Cassell & Co. Ltd., 1958.
- DE GERLACHE. Quinze Mois dans l'Antarctique. Brussels, 1902.
- HAYES, J. G. Antarctica: A Treatise on the Southern Continent. London, Richards Press, 1928.

- HAYES, J. G. The Conquest of the South Pole. London, Thorton Butterworth, 1932.
- JAMES, DAVID. That Frozen Land. London, Falcon Press, 1949.
- MATHEWS, L. HARRISON. South Georgia: The British Empire's Sub-Antarctic Outpost. London, Simpkin Marshall, 1931.
- Murphy, Robert Cushman. Oceanic Birds of South America. London, Macmillan, 1936.
- MURPHY, ROBERT CUSHMAN. Log-book for Grace. London, Hale, 1948.
- Nordenskjold, N. O. G., and Anderson, J. G. Antarctica. London, Hurst and Blackett, 1905.
- Ommanny, F. D. South Latitudes. London, Longmans Green, 1938.
- OWEN, RUSSEL. The Antarctic Ocean. London, Museum Press, 1948.
- Pease, Francis K. To the Ends of the Earth. London, Hurst and Blackett, 1935.
- Pepper, J. Meteorology of the Falkland Islands and Dependencies, 1944-50. London, Falkland Islands Dependencies Survey, 1954.
- Pirie, J. H. Harvey, Mossman, L. C. and Brown, R. W. R. The Voyage of the "Scotia." The Story of the Scottish Antarctic Expedition. Edinburgh, Blackwood, 1906.
- RANKIN, NIALL. Antarctic Isle. London, Collins, 1951.
- ROBERTSON, R. B. Of Whales and Men. London, Macmillan, 1956.
- RYMILL, JOHN. Southern Lights. Official Account of the British Grahamland Expedition. London, Chatto and Windus, 1938.
- SAUNDERS, A. A Camera in Antarctica. Winchester Publications, 1950.
- SHACKLETON, SIR ERNEST. South: The Story of Shackleton's Last Expedition, 1914–17. London, Heinemann, 1919.
- SUTTON, GEORGE. Glacier Island. Chatto and Windus, 1957.
- VILLIERS, A. J. Whaling in the Frozen South. New York, Bobbs-Merrell, 1925.
- Walton, Kevin E. Two Years in the Antarctic. London, Lutterworth Press, 1955.
- Weddell, James. A Voyage Towards the South Pole Performed in the Years 1822–24. Containing an Examination of the Antarctic to the Seventy-Fourth Degree of Latitude. London, 1825.
- WILD, FRANK. Shackleton's Last Voyage. London, Cassel, 1923.



